

# Operation, Maintenance, and Rehabilitation Plan West Lake Boudreaux Shoreline Protection and Marsh Creation Project TE-46

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September 25, 2012



**OPERATION, MAINTENANCE, AND REHABILITATION  
PLAN**

**WEST LAKE BOUDREAUX SHORELINE PROTECTION  
AND MARSH CREATION PROJECT  
TE-46**

**September 25, 2012**

Prepared by:  
Coastal Protection and Restoration Authority of Louisiana

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## History of Revisions



## **OPERATION, MAINTENANCE, AND REHABILITATION PLAN**

### **WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION**

#### **(TE-46)**

The Coastal Protection and Restoration Authority (CPRA) of Louisiana and the United States Department of the Interior / Fish and Wildlife Service (USFWS) agree to carry out the terms of this Operation, Maintenance, Repair, and Rehabilitation Plan (hereinafter referred to as the “Plan”) of the accepted, completed project features in accordance with the Cost Share Agreement, DNR Agreement No. 2511-02-19 dated April 3, 2002 (Attachment I).

The project features covered by this plan are inclusive of and are identified as the West Lake Boudreaux Shoreline Protection and Marsh Creation Project (TE-46). The intention of the provisions of this Plan is to maintain this project in a condition that will generally provide the anticipated benefits that the project was based on. There are no requirements that this project function to any standard beyond the economic life, except that it is not left as a hazard to navigation or a detriment to the environment.

Construction of the North West Lake Boudreaux Shoreline Protection and Marsh Creation Project (TE-46) is authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended. The West Lake Boudreaux Shoreline Protection and Marsh Creation Project (TE-46) was approved on the 11<sup>th</sup> Priority Project List.

#### **1. PROJECT DESCRIPTION, PURPOSE, AND LOCATION**

The West Lake Boudreaux Shoreline Protection and Marsh Creation Project (TE-46) is located in Terrebonne Parish, Louisiana along the western side of Lake Boudreaux, south of Bayou Butler, and east of Bayou Grand Caillou and Hwy 57. The project encompasses approximately 1,177 acres including 250 acres of intermediate marsh and 927 acres of open water.

The western shoreline of Lake Boudreaux helps protect the interior low salinity marshes and aquatic grass beds from the high wave energy and turbidity found in Lake Boudreaux. The TE-46 project is intended to protect the shoreline from further erosion due to direct exposure to wave energies and to restore interior marsh lost as a result of subsidence and saltwater intrusion. The West Lake Boudreaux Shoreline Protection and Marsh Creation Project (TE-46) involves creation of 220 acres of marsh along the western shoreline of Lake Boudreaux using material dredged from Lake Boudreaux; construction of 24,553 linear feet of earthen containment dike (to be partially degraded in the third year following construction); construction and maintenance of 12,447 linear feet of foreshore rock dike along the western shoreline of Lake Boudreaux; construction and maintenance of a rock riprap choke down section; and construction and maintenance of an earthen canal plug.

The project has a twenty (20) year economic life, which began in November 2009. The principal project features include:

#### Northern Section

- Marsh Creation (122 acres)
- Foreshore Rock Dike (5,350 Linear Feet)
- Earthen Containment Dike (10,519 Linear Feet)

#### Central Section

- Marsh Creation (38 acres)
- Foreshore Rock Dike (2,140 Linear Feet)
- Earthen Containment Dike (5,398 Linear Feet)

#### Southern Section

- Marsh Creation (60 acres)
- Foreshore Rock Dike (4,957 Linear Feet)
- Earthen Containment Dike (8,636 Linear Feet)

#### Other Features

- Earthen Plug
- Choke Down Section (Rock Riprap)

## **2. CONSTRUCTION COMPLETION**

The West Lake Boudreaux Shoreline Protection and Marsh Creation Project (TE-46) completion report is included in Attachment III of this Plan. Within this completion report is a summary of information and significant events including: project personnel, final as-built project features and benefitted acres, construction cost and CWPPRA project estimates, construction oversight cost, construction activities and change orders, pipeline and utility crossing owner information, and other significant milestone dates and comments.

The project “As-Built” construction drawings updated with all field changes and modifications that occurred during construction are included in Attachment IV.

## **3. PROJECT PERMITS**

Project permit applications were completed and submitted to appropriate agencies, and permits were received prior to construction. These permits and permit amendments are included in Attachment V. Provisions for the renewal of Federal and State permits may be required.

#### 4. **ITEMS REQUIRING OPERATION, MAINTENANCE, AND REHABILITATION**

The following completed, structural components jointly accepted by CPRA and USFWS will require operation, maintenance, repair, and/or rehabilitation throughout the twenty (20) year life of the project.

##### Foreshore Rock Dike

Three segments of foreshore rock dike were constructed along the western shoreline of Lake Boudreaux. The dikes were constructed using rock riprap (ASTM D 6092-97 Riprap R-300) to an elevation of +3.5 feet NAVD88 (vertical tolerance of +0.5 feet) with a 3-foot crest width and 2.5 to 1 side slopes for the northern segment and 2 to 1 side slopes for the central and southern segments. The rock dike segments were constructed upon a geotextile fabric base. Where the rock dike was constructed adjacent to the marsh fill areas, the earthen containment dike was constructed against the marsh-side slope of the rock dike. Galvanized steel settlement plates were installed within the rock dike segments at the locations indicated.

Northern Segment – 5,350 linear feet, 2.5:1 side slopes

<u>Station</u>	<u>Description</u>
0+00 – 23+07	Rock dike only
23+07 – 53+47	Rock dike with adjoining earthen containment dike
53+47 – 54+28	Rock dike only

Central Segment – 2,140 linear feet, 2:1 side slopes

<u>Station</u>	<u>Description</u>
0+00 – 3+41	Rock dike only
3+41 – 19+46	Rock dike with adjoining earthen containment dike

Southern Segment – 4,957 linear feet, 2:1 side slopes

<u>Station</u>	<u>Description</u>
0+00 – 1+01	Rock dike only
1+01 – 52+51	Rock dike with adjoining earthen containment dike
52+51 – 53+98	Rock dike only

##### Earthen Plug

The earthen plug is located in the northwest corner of an oil and gas access channel off of Lake Boudreaux at the north end of the project area. It was constructed using dredged material from the oil and gas access channel. The plug was constructed to an elevation of +4.0 feet NAVD88 with an 8-foot top width and 3 to 1 side slopes. The plug is approximately 75 feet long.

### Choke Down Section

The choke down section is located between the southernmost extent of the northern rock dike segment and the northernmost extent of the central rock dike segment. It consists of a 2-foot thick layer of rock riprap (ASTM D 6092-97 Riprap R-300) constructed across the opening in the shoreline between the northern and central marsh creation areas. The choke down section is approximately 150 feet long (direction along the shoreline) by approximately 75 feet wide and was constructed to reduce scour in that area.

## **5. OPERATION AND MAINTENANCE BUDGET**

The cost associated with the Operations, Maintenance, and Rehabilitation of the features outlined in Section 4 of this plan for the twenty (20) year project life is included and summarized in Attachment VI.

## **6. OPERATION OF STRUCTURES**

No operation is required for this project. (Attachment VII intentionally blank)

## **7. RESPONSIBILITIES – MAINTENANCE AND REHABILITATION**

A. CPRA will:

1. In accordance with the Cost Share Agreement, DNR Agreement No. 2511-02-19 outlined in Attachment I, assume all responsibilities for maintenance and rehabilitation of the accepted, completed project features identified in Section 4.
2. Conduct joint site inspections with USFWS of the project site at least annually and after major storm events if determined to be necessary by CPRA and USFWS. CPRA will submit to USFWS, a report detailing the condition of the project features and recommendations for any corrective action. If CPRA recommends that corrective actions are needed, the report will include the entire estimated cost for engineering and design, supervision and inspection, construction, contingencies, and the urgency of such action. Annual inspection reports may be compiled under attachment VIII - Annual Inspections.
3. Perform or have performed any corrective actions needed, if such corrective actions have been approved by CPRA, USFWS, and the CWPPRA Task Force. USFWS will participate with CPRA, or its appointed representative, in the engineering and design phases of the corrective actions for the project. Oversight of engineering and construction of the corrective actions for the project will be the responsibility of CPRA or its appointed representative. At least thirty (30) calendar days prior to the date of formal request for construction bids, CPRA or its appointed representative shall provide USFWS with final

copies of all project corrective action designs and specifications for review and concurrence by USFWS. CPRA or its appointed representative shall approve the final designs and specifications prior to proceeding with bid solicitations on all project corrective action construction contracts in coordination with USFWS. Any plan and/or specification changes both before and after award of construction contracts shall be approved by CPRA in coordination with USFWS.


4. USFWS and CPRA representatives shall meet as necessary during the period of construction for corrective actions and shall make such recommendations as they deem necessary.
5. Provide the non-Federal contribution towards operation and maintenance activities as specified in the Cost Sharing Agreement between CPRA and USFWS.

B. USFWS will:

1. Conduct joint site inspections with CPRA of the project site at least annually and after major storm events if determined to be necessary by CPRA and USFWS.
2. Request funding and authorization from the CWPPRA Task Force for any corrective actions that are deemed necessary by CPRA and USFWS.
3. Provide guidance for the development of plans and implementation of the project, review final copies of any maintenance and rehabilitation project designs and specifications, and provide review and approval of all planning and construction details prior to formal request for construction bids or any corrective actions for the project.
4. Provide the Federal contribution towards operations and maintenance activities as specified in the Cost Sharing Agreement between CPRA and USFWS.

The undersigned parties, acting on behalf of their respective agencies, agree to operate, maintain, and rehabilitate the West Lake Boudreaux Shoreline Protection and Marsh Creation Project (TE-46) according to this document, referenced Cost Sharing Agreement, plans, and all applicable permits and laws.

UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

By: Jeffrey D. Weller 

Date: 10/16/12

Title: Field Supervisor, Louisiana Ecological Services Office

COASTAL PROTECTION AND RESTORATION AUTHORITY OF LOUISIANA

By: 

Date: 11/13/12

Title: Operations Division Chief

ATTACHMENT I

WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
(TE-46)

**COST SHARING AGREEMENT**

Approved Under DNR Delegated Authority  
FMS# 583777  
Karen Y. Lewis

FWS Agreement No. \_\_\_\_\_

DNR Agreement No. 2511-02-19

Approved Format 16A

**COST SHARE AGREEMENT**

**BETWEEN**

**U.S. DEPARTMENT OF THE INTERIOR-FISH AND WILDLIFE SERVICE**

**AND**

**THE STATE OF LOUISIANA**

**FOR PLANNING, ENGINEERING AND DESIGN, CONSTRUCTION, OPERATION,**

**MAINTENANCE, REHABILITATION AND MONITORING OF THE**

**WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
PROJECT**

**(TE-46)**

**THIS AGREEMENT**, entered into this 3rd day of April, 2002 by and between the U.S. Department of the Interior, represented by the Fish and Wildlife Service (FWS), acting by and through the Regional Director, Region 4, and the State of Louisiana, acting by and through the Secretary, Department of Natural Resources, (hereinafter referred to as "DNR").

**WITNESSETH, THAT:**

**WHEREAS**, expenditure of Phase I funding for the West Lake Boudreaux Shoreline Protection and Marsh Creation Project (TE-46) was authorized by the Coastal Wetlands Planning, Protection, and Restoration Act (hereinafter referred to as "CWPPRA") of 1990, 16 U.S.C. Section 3951 *et seq.*, (Public Law 101-646, Title III), and for local sponsorship by the Louisiana Coastal Wetlands Conservation and Restoration Plan, by the State of Louisiana in January 2002; and,

**WHEREAS**, upon successful completion of Phase I, expenditure of Phase II funding for the West Lake Boudreaux Shoreline Protection and Marsh Creation Project may be authorized by the Louisiana Coastal Wetlands Conservation and Restoration Task Force (hereafter referred to as the "Task Force";

**WHEREAS**, the State's Coastal Wetlands Conservation Plan was approved on November 30, 1997; all costs incurred on or after December 1, 1997 are shared at eighty-five percent (85%) Federal and fifteen percent (15%) non-Federal;



**WHEREAS**, Section 303(e) of CWPPRA states that the Secretary of the Army shall not fund the identified project unless said project is subject to such terms and conditions necessary to ensure that wetlands restored, enhanced, or managed through the project will be administered for the long-term conservation of such lands and waters and dependent fish and wildlife populations; and,

**WHEREAS**, FWS is authorized by federal law to enter a cost-sharing agreement with DNR to provide financial cost-share assistance for the construction, operation, maintenance, rehabilitation, and monitoring of the project; and,

**WHEREAS**, La. R.S. 49:213 and La. R.S. 49:214 state that the Secretary of DNR may enter into cost-sharing agreements with the federal government in order to conserve, restore, create, and enhance vegetated wetlands in coastal Louisiana in accordance with prescribed legislative oversight; and,

**WHEREAS**, DNR has agreed to pay 5% of the total Project(s) cost in actual cash and the remaining balance of its share in the form of in-kind contributions; and,

**WHEREAS**, DNR is willing to participate in cost-sharing and financing in accordance with the terms of this Agreement;

**NOW, THEREFORE**, the parties agree as follows:

#### **ARTICLE I – DEFINITIONS AND GENERAL PROVISIONS**

For the purposes of this Agreement:

a. The term **“Project”** shall mean the work authorized by Congress as specified above for the construction of the TE-46 West Lake Boudreaux Shoreline Protection and Marsh Creation Project. The TE-46 Project is located in Terrebonne Parish. The Projects objectives are to : halt erosion of the west Lake Boudreaux shoreline; maintain the productive shallow open-water /SAV habitat located behind the western shoreline of Lake Boudreaux; create 121 acres of marsh and nourish 85 acres of marsh along the western shoreline of Lake Boudreaux.

b. The term **“total Project costs”** shall mean all costs incurred by DNR and FWS directly related to implementation of the Project. Such costs shall be those costs incurred after January 16, 2002; and which shall include, but not necessarily be limited to, the following: engineering and design costs; lands, easements, servitudes, and rights-of-way costs; project construction costs; construction management costs; relocation costs; pre-construction, construction, and post-construction monitoring costs; operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) costs; supervision and administration costs; hazardous and toxic waste investigation costs; cultural resources investigation costs; and NEPA documentation studies cost.

c. The term **“total first costs”** shall mean all costs incurred by DNR and FWS directly related to completion of the construction phase of the project as identified in the official CWPPRA

authorization document prepared by the CWPPRA Task Force January 16, 2002 and submitted to Congress.

- d. The term **“period of construction”** shall mean the time from the advertisement of the first construction contract to the time that the Contracting Officer certifies to DNR that construction of the entire project is complete. The Contracting Officer shall furnish to DNR copies of the government’s written Notice of Acceptance of Complete Work furnished to contractor(s) for all contracts for the Project.
- e. The term **“Contracting Officer”** shall mean the FWS Regional Director, Region 4, or his designee.
- f. The term **“relocations”** shall mean the preparation of plans and specifications for, and the accomplishment of any alteration, modification, lowering or raising in place, and/or a new construction related to, but not limited to, existing: buildings, pipelines, public utilities (such as municipal water and sewer lines, telephone lines, and storm drains), aerial utilities, cemeteries, and other facilities, structures, and improvements determined by FWS and DNR to be necessary for the construction, operation, maintenance, monitoring, and rehabilitation of the Project.
- g. The term **“utility”** shall mean pipelines, cables, and similar facilities.
- h. The term **“fiscal year”** shall mean one fiscal year of the United States Government, unless otherwise specifically indicated. The Government fiscal year begins on October 1 and ends on September 30.
- i. The term **“construction management costs”** shall mean costs incurred by FWS directly supervising and administering construction contracts, to include related overhead costs, as specified in applicable contracting regulations.
- j. The term **“Project Monitoring Plan”** shall mean a plan jointly developed and approved by DNR and FWS specifically for the Project which identifies all monitoring requirements, parameters and procedures. DNR will be responsible for collection of monitoring data and assimilation as part of the local cost-share responsibilities. Monitoring will be conducted for the expected life of the Project or as agreed by FWS and DNR.
- k. The term **“maintenance”** shall mean any action completed after the construction period that is required to maintain the Project at “as built” standards, and costing less than twenty percent (20%) of the original construction cost.
- l. The term **“rehabilitation”** shall mean any action completed after the construction period that is required to maintain the Project at “as built” standards, and costing twenty percent (20%) or more of the original construction cost.

- m. The term **“Operation, Maintenance Repair, Replacement, and Rehabilitation (OMRR&R) Plan”** shall be a plan jointly developed and approved by FWS and DNR upon completion of the Project and prior to acceptance by DNR of the completed Project or functional portion of the Project. The OMRR&R Plan will address specific items, including any related landrights issues, with estimated costs, to be performed throughout the expected life-span of the Project and will be revised periodically to reflect actual needs.
- n. The term **“operation, maintenance, repair, replacement, and rehabilitation costs”** shall mean all costs incurred by DNR and FWS related to operating, maintaining, and rehabilitating the final accepted Project. Specific requirements and responsibilities shall be identified and mutually accepted by both parties in an “Operations, Maintenance, Repair, Replacement and Rehabilitation Plan”.
- o. The term **“obligation”** refers to amount of orders placed, contracts awarded, services rendered, or other commitments made during a given period which will require outlay during the same or some future period.
- p. The term **“engineering and design costs”** shall mean all costs incurred by DNR and FWS related to the development, approval, and acceptance of detailed engineering and design plans, specifications, and Project bid documents. This will also include all supervision and administrative costs associated with the engineering and design phase of the Project and will terminate with the award of a Project construction contract.
- q. The term **“monitoring costs”** shall mean all costs by DNR and FWS in developing and implementing the Project Monitoring Plan to evaluate the effectiveness of the Project in reaching Project objectives. This shall include, but not be limited to, such items as plan development and review, conducting pre- and post-construction monitoring procedures, collection and evaluation of data, and preparation of monitoring reports with interpretation for future project application.
- r. The term **“functional portion of the Project”** shall mean a completed portion of the Project as determined by the Contracting Officer and DNR in writing to be suitable for tender to DNR for operation and maintenance in advance of completion of the entire Project. To be suitable for tender, the Contracting Officer must determine that the completed portion of the Project can function independently and for a useful purpose, although the balance of the Project is not complete.
- s. The term **“life of the Project”** shall mean the next twenty (20) years starting at the date of acceptance of the final Project, or functional portion of the Project, as provided in Article V.e. of this Agreement.
- t. The term **“Phase I”** shall include, but not be limited to, a determination of environmental benefits, any necessary hydrologic data collection and analysis, Pre-construction Biological Monitoring, Monitoring Plan Development, and Engineering and Design. Engineering and Design includes Engineering, Design, Environmental Clearances, Permitting, Project Management and Real Estate requirements up to, but not including, the purchase of real estate.

u. The term **"Phase II"** shall mean Construction, Post-construction Biological Monitoring, OMRR&R and the Purchase of Real Estate. Construction includes Project Management, Contract Management, Construction Supervision, Inspection.

v. The term **"CWPPRA Project Standard Operating Procedures Manual"** shall mean the standard procedures to be used by FWS and the State in the management of the Project. These standard procedures shall not supersede nor invalidate any rules or regulations internal to FWS or the State.

## ARTICLE II – OBLIGATIONS OF THE PARTIES

a. No federal funds may be used to meet the DNR share of Project costs under this Agreement unless the expenditure of such funds is expressly authorized by statute as verified in writing by the granting agency.

b. DNR shall:

1. Over the life of the Project, fund a total contribution equal to the non-federal share of the total Project costs, including a minimum cash contribution of five percent (5%) of the total Project costs. Said contribution will include cash and/or credit granted from land rights, easements, servitudes, and rights-of-way obtained through or owned by DNR, or relocations credit granted for Project features furnished by DNR, and all administrative and management costs required by DNR to fulfill the obligations specified in this Agreement including pre- and post- construction Project monitoring, permitting coordination, geotechnical investigation, engineering services, landrights amendment processing and or acquisition, maintenance, operation, and/or rehabilitation responsibilities accepted by DNR.

2. Prior to advertisement of each construction contract, and as further specified in Article VI.b.2. hereof, provide a minimum cash contribution of five percent (5%) of that portion of total first costs incurred to date and anticipated to be expended through completion of that construction contract.

3. Prior to the advertisement of each construction contract, and as further specified in Article VI.b.2. hereof, provide a contribution equal to the non-federal share of that portion of total first costs incurred to date and anticipated to be expended through completion of that construction contract. Said contribution will include cash and/or credit granted from land rights, easements, servitudes, and rights-of-way obtained through or owned by DNR, or relocations credit granted for Project features furnished by DNR, administrative and management costs, and any engineering and/or ecological, biological, or hydrological review evaluations required by DNR to fulfill the obligations specified in this Agreement.

4. Implement the Project Monitoring Plan in accordance with procedures jointly developed with FWS and, as further specified in Article VIII, to assure the performance of the long-term monitoring requirements.

5. Provide specific engineering services associated with the Project, subject to the cost-sharing provisions, and as mutually agreeable to both DNR and FWS, or its engineering representative. Specific engineering services to be provided by DNR may include design surveys, plan preparation, post-construction surveys, etc. All such services will be approved by and subject to the supervision and guidance of FWS engineering representatives.

6. Acquire all land rights, servitudes, rights-of-way, easements, and material borrow and dredged material disposal areas associated with the Project which are determined to be on lands or waters that are not federally owned or federally controlled, subject to cost-sharing terms previously identified above.

7. Jointly develop an OMRR&R Plan with FWS which will identify specific long-term maintenance, operation, repair, replacement and rehabilitation requirements. Said plan will be developed upon completion of the Project features in accordance with Article I.m., and will be reviewed and modified as necessary after an evaluation conducted by DNR, with FWS participation, within 12-18 months following completion of construction.

8. Provide for non-federal share of costs identified in the OMRR&R Plan, according to Articles VI and VIII.a.

9. Assume responsibilities (including engineering, design, and construction services) for OMRR&R of the Project upon acceptance of the completed Project, limited only by the provisions of Article XVI. FWS will reimburse DNR using electronic funds transfer (EFT) procedures in accordance with 31 CFR 208 for the federal share of such costs, subject to availability of funds.

10. Participate in a preliminary design review with FWS at thirty percent (30%) completion of Phase I project evaluation in accordance with Section 6.e., CWPPRA Project Standard Operating Procedures Manual (Revision 4.0 dated May 29, 2001).

c. FWS shall:

1. Over the life of the Project, fund a total contribution equal to the federal share of the total Project costs, including any relocation costs associated with the Project.

2. Prior to the advertisement of each construction contract, FWS shall provide a contribution equal to the federal share of that portion of total first costs incurred to date and anticipated to be expended through completion of that construction contract, including any relocation costs associated with the Project.

3. Except as limited by the provisions of Article VIII.b., and subject to the availability of appropriations, reimburse DNR for the federal share of the approved cost of pre- and post-construction monitoring of the Project upon receipt of the request for reimbursement.

4. Reimburse DNR using electronic funds transfer (EFT) procedures in accordance with 31 CFR 208 for the federal share of the actual costs incurred by DNR for project management, geotechnical and engineering services provided for the Project, permitting coordination, and acquiring all land rights (easements, servitudes, and rights-of-way, including suitable borrow material and disposal areas) as determined by FWS to be necessary for Project construction, operation, monitoring, maintenance, and rehabilitation.
5. Acquire all landrights, easements, servitudes and rights-of-way, including suitable borrow and dredged material disposal areas, and fulfill all applicable Federal and state regulatory requirements on federally owned or controlled lands or waters.
6. Participate with DNR on the level of design effort needed to determine the effectiveness of a project in achieving intended environmental benefits.
7. Provide all engineering, design, including but not limited to surveying, geotechnical investigations, hydrological modeling as deemed necessary by DNR and FWS, land services, and construction services, except those mutually agreed as specified in Article II.b.5. and Article II.b.9. associated with the Project, subject to the cost-sharing provisions identified.
8. Participate in a preliminary design review with DNR at thirty percent (30%) completion of Phase I project evaluation in accordance with Section 6.e., CWPPRA Standard Operating Procedures Manual (Revision 4.0 dated May 29, 2001).
9. Provide the federal share of costs identified in the OMRR&R Plan and actually incurred by DNR, subject to the limitations on expenditures set forth in Article XIX.
10. Provide authorized technical services including, but not limited to, obtaining basic information; preparation of drawings, design, and specifications; and performance of layout, inspection services, and quality assurance during construction. The design report, preliminary and final plans must be reviewed by the DNR Project Manager and concurred upon prior to advertisement.
11. Arrange for and conduct final inspection of the completed works of improvement with DNR to determine whether all work has been performed in accordance with the contractual requirements. Based on this determination, accept work from the contractor and notify DNR of acceptance.
12. Participate, with DNR, in an evaluation within 12 - 18 months following the completion of construction to assess OMRR&R needs. FWS will also participate with DNR in any subsequent evaluations as the parties deem necessary to address long-term maintenance, operation, and rehabilitation of the Project.
13. Ensure that all National Environmental Policy Act (NEPA) and regulatory requirements, including permits, for the Project are met.

14. Submit to DNR the completed As-built Surveys/Construction drawings and Construction Completion Report.

### **ARTICLE III – LAND RIGHTS, FACILITIES, AND PUBLIC LAW 91-646 RELOCATION ASSISTANCE**

a. On non-Federal lands, DNR shall acquire all land rights, easements, servitudes, rights-of-way, and material borrow and disposal areas determined to be necessary for construction of the Project and as mutually agreed-to by DNR and FWS. Prior to the advertisement of any construction contract, DNR shall provide certification to FWS that all land rights, easements, servitudes, rights-of-way and material borrow and disposal areas required, have been acquired as part of this Agreement and shall furnish to FWS evidence supporting actual rights-of-way acquired by DNR for Project construction, operation, monitoring, and maintenance.

b. The State shall comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR part 24, in acquiring lands, easements, and rights-of-way for construction and subsequent operation, maintenance, and rehabilitation of the project.

c. No title to the property or minerals affected herein are transferred with any easements, servitudes, rights-of-way, and material borrow and disposal areas provided by DNR pursuant to this Agreement. No public rights of ownership shall be transferred and vested in private parties as a result of the Project. Further, any easements, servitudes, rights-of-way, and material borrow and disposal areas shall provide for reasonable access for mineral exploration and development.

### **ARTICLE IV – VALUE OF LAND RIGHTS AND FACILITIES**

a. The value of the land rights, easements, servitudes, and rights-of-way to be included in total Project costs and credited towards DNR's share of total Project costs will be determined in accordance with the following procedures:

1. The costs associated with securing all land rights, easements, servitudes, and rights-of-way to be acquired by DNR (Article III.a.) shall be the actual costs including, but not limited to, expenses associated with securing legal land rights instruments from all sources (legal reviews, recording fees, etc.) associated with Project activities. An estimate of such costs will be prepared by DNR and approved by FWS for credit allowance as part of the DNR cost-share. Credit allowance for any costs above this estimate must be approved by FWS.

2. Any costs incurred for relocations will be included in total Project costs and will be accomplished as part of Project construction through the agreed cost-share arrangement.

## **ARTICLE V – CONSTRUCTION PHASING AND MANAGEMENT**

- a. To provide for consistent and effective communication between DNR and FWS during the period of construction, DNR and FWS shall appoint representatives to coordinate scheduling, plans, specifications, modifications, contract costs, and other matters relating to construction of the Project.
- b. DNR will participate with FWS, or its appointed representative, in the engineering and design phases of the Project. Oversight of engineering and construction of the Project will be the responsibility of FWS or its appointed representative. At least thirty (30) calendar days prior to the date of formal request for construction bids, FWS, or its appointed representative, shall provide DNR with final copies of all Project designs and specifications for review and concurrence by DNR. FWS, or its appointed representative, and DNR shall concur in the final designs and specifications prior to proceeding with bid solicitations on all project construction contracts. Any plan and/or specification(s) changes, both before and after award of construction contracts, shall be jointly approved by FWS and DNR.
- c. The representatives appointed above shall meet as necessary during the period of construction and shall make such recommendations as they deem warranted to the Contracting Officer.
- d. The Contracting Officer shall consider the recommendations of the representatives in all matters relating to construction of the Project; but the Contracting Officer, having ultimate responsibility for construction of the Project, has complete discretion to accept, reject, or modify the recommendations.
- e. Following completion of the Project, or functional portion of the Project, final acceptance of the Project, or functional portion of the Project, will be jointly made by FWS and DNR. Should the Project, or functional portion of the Project, not meet plan specification objectives, then DNR will have the option to approve modification of the Operation, Maintenance, and Rehabilitation Plan, or to terminate this Agreement. However, both DNR and FWS shall endeavor to modify the Project and/or its Operation, Maintenance, and Rehabilitation Plan to ensure that the original plan specification objectives are achieved.

## **ARTICLE VI – METHOD OF PAYMENT**

- a. DNR shall provide the contributions required under Article II of this Agreement. The Task Force has estimated a Phase I cost of \$1,322,354 and authorized a maximum Phase I cost of \$1,652,943 for this particular Project. To meet its share, DNR will contribute, through in-kind services or in cash, the non-federal share of the maximum Phase I costs. The maximum amount of DNR's contribution is \$247,941. This figure is subject to modification as provided for in Section 303(f) of CWPPRA. Any costs in excess of the maximum Phase I cost of \$1,652,943 are subject to amendment of this Agreement and Task Force approval, as provided in Article XIX. The maximum amount of DNR's required minimum five percent (5%) cash contribution for Phase I is \$82,647. Funding methods and limits of obligations are specified in Article XIX – Project Cost Limits. Should the Task Force authorize expenditure of Phase II funding, this Agreement shall be amended in accordance with Article XX.



b. DNR shall provide its required cash contribution in proportion to the rate of federal expenditures in accordance with the following provisions:

1. For purposes of budget planning, FWS shall notify DNR by October 1 of each year of the estimated funds that will be required from DNR to meet its share of total Project costs for the subsequent fiscal year.

2. No later than sixty (60) calendar days prior to the advertisement of each construction contract, FWS shall notify DNR of DNR's share of that portion of total first costs incurred to date and anticipated to be expended through completion of that construction contract. This amount will include the non-federal share of total first costs in cash and/or credit as described in Article II.b.3., and the minimum cash contribution of five percent (5%) of total first costs as described in Article II.b.2. No later than thirty (30) calendar days thereafter, DNR shall verify to the satisfaction of FWS or its representatives, that it has deposited the requisite amount in an escrow account with interest accruing to DNR.

3. For the second and subsequent fiscal years of Project implementation, no later than sixty (60) calendar days prior to the beginning of the fiscal year, DNR shall make the necessary funds available to FWS through the funding mechanism specified in Article VI.b.2. of this Agreement. As construction of the Project proceeds, FWS shall adjust the amount required to be provided under this paragraph to reflect actual costs.

4. If, at any time during the period of construction, FWS determines that additional funds will be needed from DNR to meet DNR's required share, FWS shall so notify DNR, and DNR, no later than forty-five (45) calendar days from receipt of such notice, shall make the necessary funds available through the funding mechanism specified in Article VI.b.2. of this Agreement.

c. FWS will draw on the escrow account such sums as FWS deems necessary to cover contractual and in-house fiscal obligations attributable to the Project on an annual basis, as well as costs incurred by FWS prior to the initiation of construction but after January 16, 2002, according to Article I.b.

d. The escrow account will be managed for FWS by the New Orleans District, U.S. Army Corps of Engineers. Funds will be withdrawn from the account and disbursed to FWS as requested.

e. Upon completion of the Project, or termination of this Agreement in accordance with Article XV of this Agreement, and resolution of all relevant contract claims and appeals, FWS shall compute the total Project costs and tender to DNR a final accounting of DNR's share of total Project costs. In the event that the total contribution by DNR is less than its minimum required share of total Project costs, DNR shall, no later than ninety (90) calendar days after receipt of written notice, make a cash payment to FWS of whatever sum is required to meet its minimum required non-federal share of total Project costs, subject to the availability of appropriations.

f. In the event DNR has made cash contributions in excess of five percent (5%) of total Project costs which result in DNR having provided more than its required share of total Project costs, FWS shall, no later than ninety (90) calendar days after the final accounting is complete, subject to the availability of appropriations, return said excess to DNR; however, DNR shall not be entitled to any refund of the five percent (5%) cash contribution required pursuant to Article II.b.2. of this Agreement.

g. If DNR's total contribution under this Agreement (including land rights, easements, rights-of-way, relocations, material borrow and disposal areas, and work-in-kind provided by DNR and approved by FWS) exceeds DNR's required non-federal share of total Project costs, FWS shall verify the actual exceeded costs and direct the U.S. Army Corps of Engineers, subject to the availability of appropriations for that purpose, and the minimum five percent (5%) cash requirement, refund the excess to DNR no later than ninety (90) calendar days after the final accounting is complete.

## **ARTICLE VII – DISPUTES**

Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiations or other forms of non-binding alternative dispute resolution mutually acceptable to the parties.

## **ARTICLE VIII – MONITORING, OPERATING, MAINTENANCE, REPAIR, REPLACEMENT AND REHABILITATION**

a. After FWS has accepted, with the concurrence of DNR, the completed Project, or the functional portion of the Project, DNR shall assume long-term monitoring responsibilities in accordance with the Project Monitoring Plan defined in Article I.j. of this Agreement. At this same time, DNR will also assume responsibilities for operation, maintenance repair, replacement, and rehabilitation (OMRR&R) of the completed Project, or functional portion of the Project, following the recommendations jointly developed and approved by DNR and FWS in the OMRR&R Plan defined in Article I.m. of this Agreement. These responsibilities will remain in effect for the expected life of the Project which is twenty (20) years from the date of acceptance of the completed Project unless otherwise agreed to by FWS and DNR.

b. DNR grants FWS the right to enter, at reasonable times and in a reasonable manner, upon land which it owns or maintains access easements to the Project, for the purpose of inspection related to monitoring, and OMRR&R of the Project. If an inspection shows that DNR, for any reason, is failing to fulfill its obligations under this Agreement, FWS will send a written notice to DNR concerning a need for compliance. If DNR persists in such failure for ninety (90) calendar days after receipt of this notice, then FWS shall have a right to cancel the federal assistance portion of this Agreement for any additional expenses related to monitoring, and OMRR&R costs of the Project.

## **ARTICLE IX – MAINTENANCE OF RECORDS**

FWS and DNR shall keep books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total Project costs. FWS and DNR shall maintain such books, records, documents and other evidence for a minimum of three (3) years after completion of construction, operation, maintenance, repair, replacement, rehabilitation, and monitoring of the Project and resolution of all relevant claims arising therefrom, and shall make available at their offices at reasonable times, such books, records, documents, and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

## **ARTICLE X – GOVERNMENT REVIEW OF RECORDS**

FWS shall have the right to conduct an audit, when appropriate, of DNR's records for the Project to ascertain the reasonableness and allowability of its costs for inclusion as credit against the non-federal share of Project costs.

## **ARTICLE XI – STATE REVIEW OF RECORDS**

DNR shall have the right to conduct an audit, when appropriate, of FWS' records for the Project to ascertain the reasonableness and allowability of its costs for inclusion as credit against the federal share of Project costs.

## **ARTICLE XII – RELATIONSHIP OF PARTIES**

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this Agreement, and neither party is to be considered the officer, agent, or employee of the other.

## **ARTICLE XIII – OFFICIALS NOT TO BENEFIT**

No member of, or delegate to, the Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

## **ARTICLE XIV – COVENANT AGAINST CONTINGENT FEES**

DNR warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by DNR for the purpose of securing business. For breach or violation of this warranty, FWS shall have the right to annul this Agreement without liability, or, in its discretion, to add to the Agreement or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

## **ARTICLE XV – TERMINATION OR SUSPENSION**

a. If FWS or DNR fails to receive annual appropriations for the Project in amount sufficient to meet Project expenditure for the then-current or upcoming fiscal year, FWS or DNR shall so notify the other Party. After sixty (60) calendar days from such notification either party may elect, without penalty, to terminate this Agreement pursuant to this Article or to defer future performance hereunder; however, deferral of future performance under this Agreement shall not affect existing obligations or relieve the parties of liability for any obligation previously incurred. In the event that either party elects to terminate this Agreement pursuant to this Article, both parties shall conclude their activities relating to the Project and proceed to final accounting in accordance with Article VI of this Agreement. In the event that either party elects to defer future performance under this Agreement pursuant to this Article, such deferral shall remain in effect until such time as FWS or DNR receives sufficient appropriations or until either party elects to terminate this Agreement.

b. Except as provided in paragraph (a) above, if at any time DNR fails to make the payments required under this Agreement, FWS shall terminate or suspend work on the Project until DNR is no longer in arrears, unless FWS determines that continuation of work on the Project is in the best interest of the United States or is necessary in order to satisfy agreements with any other non-federal interests in connection with the Project. DNR shall not be liable for any future payments should FWS continue work on the Project, but shall remain liable for obligations previously incurred.

## **ARTICLE XVI – OBLIGATIONS OF FUTURE APPROPRIATIONS**

Nothing herein shall constitute, or be deemed to constitute, an obligation of future appropriations by the legislature of the State of Louisiana when obligating future appropriations would be inconsistent with the State's constitutional or statutory limitations.

## **ARTICLE XVII – NOTICES**

a. All notices, requests, demands, and other communications required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally, given by prepaid telegram, or mailed by first-class (postage pre-paid), registered, or certified mail, as follows:

If to DNR:

Secretary, Department of Natural Resources  
P.O. Box 94396  
Baton Rouge, LA 70804-9396

If to FWS:

Regional Director  
U.S. Fish and Wildlife Service  
1875 Century Boulevard  
Atlanta, Georgia 30345

b. A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

c. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at such time as it is personally delivered or seven (7) calendar days after it is mailed, as the case may be.

### ARTICLE XVIII – CONFIDENTIALITY

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

### ARTICLE XIX – PROJECT COST LIMITS

a. The Task Force will finance the Project in two phases. Phase I funding is comprised of those funds needed for any necessary analysis of environmental benefits, any necessary hydrologic data collection and analysis, Pre-construction Biological Monitoring, Monitoring Plan Development, and Engineering and Design. Engineering and Design includes Engineering, Design, Environmental Clearances, Permitting, Project Management and Real Estate requirements up to, but not including, the purchase of real estate. The Task Force estimated Phase I cost for this Project at \$1,322,354. To provide flexibility in Phase I of the Project, the Task Force has authorized a maximum Phase I cost of 125% of the estimated Phase I cost or \$1,652,943 for this particular Project. This is the total funding and obligation for FWS and the State until Phase II funding is approved. Any cost in excess of this maximum total Phase I cost is subject to Task Force approval and amendment of this Agreement, as provided in Article XX. The 125% budget for Phase I by funding category includes the following:

1.	E & D (including supervision & administration)	\$1,486,414
2.	Easements and Landrights	\$ 138,314
3.	Pre – Construction Monitoring	<u>\$ 28,215</u>
Total		\$1,652,943

b. If, at any time during the performance of work for a particular funding category, the actual or anticipated cost of that category exceeds the 125% cost of that particular funding category as set forth in Article XIX.a. of this Agreement, all work in that particular category shall cease. FWS and DNR may agree to increase the cost of completing that particular category by transferring funds from one category to the other, but only if such increase would not result in the total Phase costs exceeding the maximum total cost defined in Article XIX.a. of this Agreement. Such agreement regarding transferring funds from one category to the other shall be made by letter agreement confirmed by the mutual written approval of both the FWS Regional Director and the DNR Secretary. Work on that particular funding category shall thereafter resume.

c. After Phase I has been substantially completed, the Task Force may authorize expenditure of Phase II funding. This process will be accomplished as specified in the CWPPRA Project Standard Operating Procedures Manual. This Agreement shall then be amended in accordance with the provisions

of Article XX to include the total Phase II costs and the initial fund obligation of Phase II which consists of Construction, the purchase of real estate, and the first three (3) years of Post- construction Biological Monitoring, and OMRR&R. Construction includes Project Management, Contract Management, Construction Supervision, and Inspection.

d. Post-construction Biological Monitoring and OMRR&R costs and fund obligations beyond the initial first three (3) year funding obligation will be in accordance with Section 6.j. of the CWPPRA Project Standard Operating Procedures Manual (Revision 4.0 dated May 29,2001).

#### **ARTICLE XX – AMENDMENTS TO BE IN WRITING**

This Agreement may be modified by agreement of the parties, in accordance with the provisions of CWPPRA and applicable federal and state regulations. All such amendments, modifications, revisions, and/or changes to this Agreement must be made in writing and acknowledged by signature of the authorized representatives of all parties of this Agreement. All such amendments, modifications, revisions, and/or changes to this Agreement shall be subject to review and approval by the Division of Administration, State of Louisiana.

#### **ARTICLE XXI – EQUAL OPPORTUNITY AND CIVIL RIGHTS**

The program or activities conducted under this Agreement will be in compliance with the nondiscrimination provisions contained in the following Federal anti-discrimination laws: (1) Titles VI and VII of the Civil Rights Act of 1964 (Public Law 88-352), as amended; (2) the Civil Rights Restoration Act of 1987 (Public Law 100-259); (3) the Civil Rights Act of 1991 (Public Law 102-166), as amended; (4) Executive Order 11478, as amended; (5) Section 504 of the Rehabilitation Act of 1973 (PL 93-112), as amended; (6) Title II of the Americans with Disabilities Act of 1990 (PL 101-336); (7) the Age Discrimination in Employment Act (PL 93-259), as amended; (8) Age Discrimination Act of 1975 (PL 94-135); (9) Equal Pay Act; (10) Title IX of the Education Amendments of 1972, as amended; and (11) other Federal statutes that prohibit discrimination. They will also be in accordance with nondiscrimination regulations of the Secretary of Interior (43 CFR 17). The program or activities conducted under this Agreement will provide that no person in the United States shall on the grounds of race, color, national origin, age, sex, religion, marital status, handicap or sexual orientation be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance from the Departments of Interior or any agency thereof.

#### **ARTICLE XXII – SURVEY**

Prior to commencement of any construction activities, FWS or the Office of Coastal Restoration and Management of DNR, at the option of DNR, shall (1) cause to be conducted, a survey to determine the highest tide during winter season or such other time which will indicate the extent of State ownership existing prior to commencement of any restoration activities, or (2) obtain aerial photographs or satellite images of the project area taken within one (1) year prior to commencement of the restoration activity, or (3) acquire such other information as is acceptable to DNR to indicate the extent of State ownership.

Any costs associated with this Article are considered a part of total Project costs and shall be cost-shared according to the terms previously identified.

#### **ARTICLE XXIII – FEDERAL AND STATE LAWS**

- a. In exercise of DNR's rights and obligations hereunder, DNR agrees to comply with all applicable Federal and State laws and regulations.
- b. FWS agrees to comply with all applicable Federal and State of Louisiana laws and/or regulations, unless state law and regulations are preempted by federal law.

#### **ARTICLE XXIV – FISCAL FUNDING**

The continuation of this contract is contingent upon the appropriation of funds to fulfill the requirements of the contract by the Louisiana legislature. If the Louisiana legislature fails to appropriate sufficient monies to provide for the continuation of the contract, or if such appropriation is reduced by the veto of the governor or by any means provided in the appropriations act to prevent the total appropriation for the year from exceeding revenues for that year, or for any other lawful purpose, and the effect of such reduction is to provide insufficient monies for the continuation of the contract, the contract shall terminate on the date of the beginning of the first fiscal year for which funds are not appropriated.

**WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
PROJECT TE-46**

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed on the 3<sup>rd</sup>  
day of April, 2002, before the undersigned witnesses.

**U.S. DEPT. OF INTERIOR  
FISH AND WILDLIFE SERVICE  
SERVICE**

BY: Sam D. Hamilton  
Sam D. Hamilton  
Regional Director

**STATE OF LOUISIANA**

BY: Jack C. Caldwell  
Jack C. Caldwell, Secretary  
Louisiana Department of  
Natural Resources

**WITNESSES:**

Peggy S. Kendrick  
[Signature]  
Liz Chebis

**WITNESSES:**

Suzanne Terrell  
Julia Ransom  
Karen G. Lewis



CERTIFICATE OF AUTHORITY

I, Warren A. Fleet, do hereby certify that I am the principal legal officer of the Department of Natural Resources for the State of Louisiana, that the Department of Natural Resources for the State of Louisiana is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the U.S. Department of Interior-Fish and Wildlife Service and the State of Louisiana in connection with the **WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION PROJECT (TE-46)**, Terrebonne, Parish, LA, and that the persons who have executed this Agreement on behalf of the State have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 9th day of April, 2002.

Warren A. Fleet  
Warren A. Fleet  
General Counsel

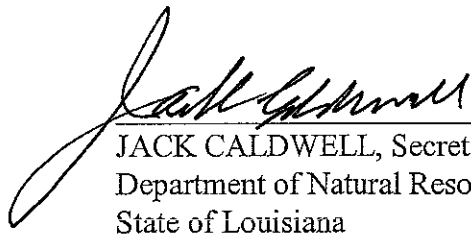
### **CERTIFICATION REGARDING LOBBYING**

The undersigned certifies, to the best of his or her knowledge and belief that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

DATE: 4/3/02

  
\_\_\_\_\_  
JACK CALDWELL, Secretary  
Department of Natural Resources  
State of Louisiana

**STATE OF GEORGIA**

**COUNTY OF DEKALB**

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said County and State aforesaid, on this 15<sup>th</sup> day of May 2002, personally came and appeared Sam D. Hamilton who declared that he is the Regional Director of the U.S. Department of the Interior, Fish and Wildlife Service, that he executed the foregoing instrument on behalf of said Federal Agency and that the instrument was signed pursuant to the authority granted to him by said Federal Agency and that he acknowledged the instrument to be the free act and deed of said Federal Agency.

  
NOTARY PUBLIC

Notary Public, Cherokee County, Georgia  
My Commission Expires November 23, 2003

My commission expires: \_\_\_\_\_  
(SEAL)

**STATE OF LOUISIANA**

**PARISH OF EAST BATON ROUGE**

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said Parish and State aforesaid, on this 3<sup>rd</sup> day of April, 2002, personally came and appeared Jack C. Caldwell, to me known, who declared that he is the Secretary of the Department of Natural Resources, State of Louisiana, that he executed the foregoing instrument on behalf of said State Agency and that the instrument was signed pursuant to the authority granted to him by said State Agency and that he acknowledged the instrument to be the free act and deed of said State Agency.

  
NOTARY PUBLIC

My commission expires: until life  
(SEAL)

AMENDMENT NO. 1  
TO  
COST SHARING AGREEMENT

Approved Under DNR Delegated Authority

CFMS#

583777

*Karen L. Lewis*

BETWEEN  
U.S. DEPARTMENT OF INTERIOR - FISH AND WILDLIFE SERVICE  
AND  
STATE OF LOUISIANA  
FOR CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE  
WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
TE-46

Reference is made to ARTICLE XX-AMENDMENTS TO BE IN WRITING, of the Cost Sharing Agreement for the captioned Project entered into the 3rd day of April, 2002, by and between the U.S. Department of Interior, represented by the Fish and Wildlife Service (hereinafter referred to as "FWS"), acting by and through the Supervisor, Louisiana Field Office, and the State of Louisiana, acting by and through the Secretary, Department of Natural Resources (hereinafter referred to as "DNR"), which allows for the Cost Sharing Agreement to be amended in writing.

Therefore,

WITNESSETH THAT:

WHEREAS, Phase I categories of E&D (including supervision & administration), Easements and Landrights, and, Pre-Construction Monitoring are substantially completed; and,

WHEREAS, expenditure of Phase II for the West Lake Boudreaux Shoreline Protection and Marsh Creation TE-46 was authorized by the PL 101-646 Task Force February 8, 2006.

NOW THEREFORE, the following Articles and Paragraphs are amended as follows:

1. ARTICLE VI – METHOD OF PAYMENT

Paragraph "a." contained in the April 3, 2002 Agreement is deleted in its entirety and the following is substituted therefor:

"a. DNR shall provide the contributions required under Article II of this Agreement. The PL 101-646 Task Force has estimated a Phase I cost of \$1,322,354 and a Phase II cost of \$14,654,600 for a total amount of \$15,976,954.

To meet its share, DNR will contribute, through in-kind services or in cash, the non-federal share of the Phase I and Phase II costs. The maximum amount of DNR's contribution for Phase I is \$198,353 and for Phase II is \$2,198,190 the total of which is \$2,396,543. This figure is subject to modification as provided for in Section 303(f) of CWPPRA. Any costs in excess of the Phase I cost of \$1,322,354 or the Phase II cost of \$14,654,600 are subject to amendment of this Agreement and Task Force approval, as provided in ARTICLE XIX. The amount of DNR's required minimum five percent (5%) cash contribution for Phase I is \$66,117 and Phase II is \$732,730. Funding methods and limits of obligations are specified in ARTICLE XIX-PROJECT COST LIMITS."

## 2. ARTICLE XIX – PROJECT COST LIMITS

Paragraph "a." contained in the April 3, 2002 Agreement is deleted in its entirety and the following is substituted therefor:

"a. The PL 101-646 Task Force has financed Phase I at an estimated cost of \$1,322,354 and the Phase II at an estimated cost of \$14,654,600 for a total cost of \$15,976,954. Phase I funding is comprised of those funds needed for any necessary analysis of environmental benefits, any necessary hydrologic data collection and analysis, Pre-construction Biological Monitoring, and Engineering and Design and Real Estate requirements up to, but not including, the purchase of real estate. Engineering and Design includes Engineering, Design, Environmental Clearances, Permitting, and Project Management. Phase II funding is comprised of those funds needed for Construction, the first three (3) years of Operation, Maintenance and Rehabilitation and the Purchase of Real Estate. Construction includes Project Management, Contract Management, Construction Supervision and Inspection. Any cost in excess of these total Phase I and Phase II costs is subject to Task Force approval and amendment of this Agreement as provided in ARTICLE XX. The budget for each Phase by funding category includes the following:

### PHASE I

1.	E&D (including supervision & administration)	\$ 776,688
2.	Easements and Landrights	\$ 110,651
3.	Pre-Construction Monitoring	\$ 22,572
4.	DNR Administration	\$ 205,344
5.	FWS Administration	\$ 205,344
6.	Corps Project Management	<u>\$ 1,755</u>
	Total Phase I	\$1,322,354

PHASE II

1.	Construction (including Project & construction management and construction supervision & inspection)	\$10,180,530
2.	Contingency	\$ 2,431,900
3.	Easements and Landrights	\$ 0
4.	FWS Administration	\$ 247,709
5.	DNR Administration	\$ 247,709
6.	Post-Construction Monitoring	\$ 0
7.	Operation, Maintenance and Rehabilitation	\$ 1,543,213
8.	U.S. Corps of Engineers Project Management	\$ 3,539
	Total Phase II	\$14,654,600

Paragraph "b." contained in the April 3, 2002 Agreement is deleted in its entirety and the following is substituted therefor:

"b. If, at any time during the performance of work for a particular funding category, the actual or anticipated cost of that category exceeds the 100% cost of that particular funding category as set forth in Article XIX.a. of this Agreement, all work in that particular category shall cease. FWS and DNR may agree to increase the cost of completing that particular category by transferring funds from one category to the other, but only if such increase would not result in the total Phase I and Phase II costs exceeding the maximum total cost defined in Article XIX.a. of this Agreement. Such agreement regarding transferring funds from one category to the other shall be made by letter agreement confirmed by the mutual written approval of both the FWS Supervisor, Louisiana Field Office and the DNR Secretary. Work on that particular funding category shall thereafter resume."

WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
PROJECT (TE-46)

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be  
executed on this 28<sup>th</sup> day of March, 2006, before  
the undersigned witnesses.

U.S. DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

BY: Russell C. Watson  
Russell C. Watson  
Supervisor  
Louisiana Field Office

THE STATE OF LOUISIANA

BY: Scott A. Angelle  
Scott A. Angelle, Secretary  
Louisiana Department of  
Natural Resources

WITNESSES:

Robert Dubois  
Robert Dubois  
Katherine D. Francis  
KATHERINE D. FRANCIS  
Karen Soileau  
Karen Soileau

WITNESSES:

Suzanne Terrell  
Suzanne Terrell  
Julia Raiford  
Julia Raiford  
Karen Y. Lewis  
Karen Y. Lewis

### CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

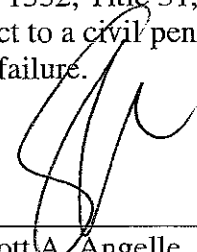
(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of a cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000.00 and not more than \$100,000.00 for each such failure.

DATE: March 28, 2009

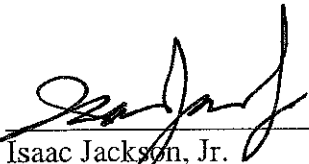
  
\_\_\_\_\_  
Scott A. Angelle, Secretary  
Department of Natural Resources  
State of Louisiana



### CERTIFICATION OF AUTHORITY


ISAAC JACKSON  
I, ~~Warren A. Flect~~, do hereby certify that I am the principal legal officer of the Department of Natural Resources for the State of Louisiana, that the Department of Natural Resources for the State of Louisiana is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the U. S. Fish and Wildlife Service and the State of Louisiana in connection with the **WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION PROJECT (TE-46)**, Terrebonne Parish, LA, and that the persons who have executed this Amendment on behalf of the State have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 30th day of March, 2006.

  
Isaac Jackson, Jr.  
General Counsel

**STATE OF LOUISIANA  
PARISH OF LAFAYETTE**


BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said Parish and State aforesaid, on this 4<sup>th</sup> day of May, 2006, personally came and appeared Russell C. Watson who declared that he is the Supervisor of the U.S. Department of Interior, Fish and Wildlife Service, Louisiana Field Office that he executed the foregoing instrument on behalf of said Federal Agency and that the instrument was signed pursuant to the authority granted to him by said Federal Agency and that he acknowledged the instrument to be the free act and deed of said Federal Agency.

  
NOTARY PUBLIC  
Notary ID 9237

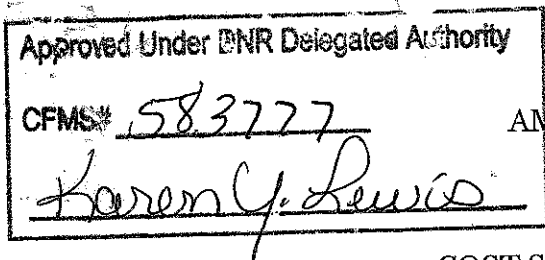
My commission expires: With Life  
(SEAL)

**STATE OF LOUISIANA  
PARISH OF EAST BATON ROUGE**

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said Parish and State aforesaid, on this 28<sup>th</sup> day of March, 2006, personally came and appeared Scott A. Angelle, to me known, who declared that he is the Secretary of the Department of Natural Resources, State of Louisiana, that he executed the foregoing instrument on behalf of said State Agency and that the instrument was signed pursuant to the authority granted by him by said State Agency and that he acknowledged the instrument to be the free act and deed of said State Agency.

  
NOTARY PUBLIC  
Monique Edwards LSBA # 1550  
Executive Counsel

My commission expires: LIFE  
(SEAL)



AMENDMENT NO. 2

TO

COST SHARING AGREEMENT

BETWEEN

U.S. DEPARTMENT OF INTERIOR - FISH AND WILDLIFE SERVICE

AND

STATE OF LOUISIANA

FOR CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE  
WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION

TE-46

Reference is made to ARTICLE XX-AMENDMENTS TO BE IN WRITING, of the Cost Sharing Agreement for the captioned Project entered into the 3rd day of April, 2002, by and between the U.S. Department of Interior, represented by the Fish and Wildlife Service (hereinafter referred to as "FWS"), acting by and through the Supervisor, Louisiana Field Office, and the State of Louisiana, acting by and through the Secretary, Department of Natural Resources (hereinafter referred to as "DNR"), which allows for the Cost Sharing Agreement to be amended in writing.

Therefore,

WITNESSETH THAT:

WHEREAS, Phase I categories of E&D (including supervision & administration), Easements and Landrights, and, Pre-Construction Monitoring are substantially completed; and,

WHEREAS, expenditure of Phase II for the West Lake Boudreaux Shoreline Protection and Marsh Creation TE-46 was authorized by the PL 101-646 Task Force February 8, 2006.

WHEREAS, Phase II Increment I cost for construction of the West Lake Boudreaux Shoreline Protection and Marsh Creation TE-46 was authorized for an increase of \$1,916,859 by the PL 101-464 Task Force February 15, 2007.

NOW THEREFORE, the following Articles and Paragraphs are amended as follows:

1. ARTICLE VI – METHOD OF PAYMENT

Paragraph “a.” contained in the April 3, 2002 Agreement is deleted in its entirety and the following is substituted therefor:

“a. DNR shall provide the contributions required under Article II of this Agreement. The PL 101-646 Task Force has estimated a Phase I cost of \$1,322,354 and a Phase II cost of \$16,571,459 for a total amount of \$17,893,813.

To meet its share, DNR will contribute, through in-kind services or in cash, the non-federal share of the Phase I and Phase II costs. The maximum amount of DNR’s contribution for Phase I is \$198,353 and for Phase II is \$2,485,719 the total of which is \$2,684,072. This figure is subject to modification as provided for in Section 303(f) of CWPPRA. Any costs in excess of the Phase I cost of \$1,322,354 or the Phase II cost of \$16,571,459 are subject to amendment of this Agreement and Task Force approval, as provided in ARTICLE XIX. The amount of DNR’s required minimum five percent (5%) cash contribution for Phase I is \$66,118 and Phase II is \$828,573. Funding methods and limits of obligations are specified in ARTICLE XIX-PROJECT COST LIMITS.”

2. ARTICLE XIX – PROJECT COST LIMITS

Paragraph “a.” contained in the April 3, 2002 Agreement is deleted in its entirety and the following is substituted therefor:

“a. The PL 101-646 Task Force has financed Phase I at an estimated cost of \$1,322,354 and the Phase II at an estimated cost of \$16,571,459 for a total cost of \$17,893,813. Phase I funding is comprised of those funds needed for any necessary analysis of environmental benefits, any necessary hydrologic data collection and analysis, Pre-construction Biological Monitoring, and Engineering and Design and Real Estate requirements up to, but not including, the purchase of real estate. Engineering and Design includes Engineering, Design, Environmental Clearances, Permitting, and Project Management. Phase II funding is comprised of those funds needed for Construction, the first three (3) years of Operation, Maintenance and Rehabilitation and the Purchase of Real Estate. Construction includes Project Management, Contract Management, Construction Supervision and Inspection. Any cost in excess of these total Phase I and Phase II costs is subject to Task Force approval and amendment of this Agreement as provided in ARTICLE XX. The budget for each Phase by funding category includes the following:

PHASE I

- |   |            |
|---|------------|
| 1. E&D (including supervision & administration) | \$ 776,688 |
| 2. Easements and Landrights                     | \$ 110,651 |

3.	Pre-Construction Monitoring	\$ 22,572
4.	DNR Administration	\$ 205,344
5.	FWS Administration	\$ 205,344
6.	Corps Project Management	\$ <u>1,755</u>
<b>Total Phase I</b>		<b>\$1,322,354</b>

## PHASE II

1.	Construction (including Project & construction management and construction supervision & inspection)	\$11,621,419
2.	Contingency	\$ 2,792,124
3.	Easements and Landrights	\$ 0
4.	FWS Administration	\$ 247,709
5.	DNR Administration	\$ 247,709
6.	Post-Construction Monitoring	\$ 0
7.	Operation, Maintenance and Rehabilitation	\$ 1,658,959
8.	U.S. Corps of Engineers Project Management	\$ <u>3,539</u>
<b>Total Phase II</b>		<b>\$16,571,459</b>

Paragraph "b." contained in the April 3, 2002 Agreement is deleted in its entirety and the following is substituted therefor:

"b. If, at any time during the performance of work for a particular funding category, the actual or anticipated cost of that category exceeds the 100% cost of that particular funding category as set forth in Article XIX.a. of this Agreement, all work in that particular category shall cease. FWS and DNR may agree to increase the cost of completing that particular category by transferring funds from one category to the other, but only if such increase would not result in the total Phase I and Phase II costs exceeding the maximum total cost defined in Article XIX.a. of this Agreement. Such agreement regarding transferring funds from one category to the other shall be made by letter agreement confirmed by the mutual written approval of both the FWS Supervisor, Louisiana Field Office and the DNR Secretary. Work on that particular funding category shall thereafter resume."

**WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH  
CREATION PROJECT (TE-46)**

**IN WITNESS WHEREOF**, the parties hereto have caused this Amendment to  
be executed on this 18th day of July, 2007,  
before the undersigned witnesses.

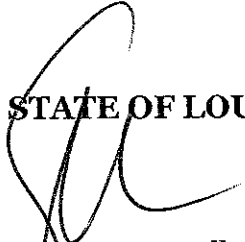
**U.S. DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE**

**BY:**

  
James F. Boggs  
Acting Field Office Supervisor  
Louisiana Field Office

**THE STATE OF LOUISIANA**

**BY:**

  
Scott A. Angelle, Secretary  
Louisiana Department of  
Natural Resources

**WITNESSES:**

Rabot Ochs  
Dona Winkler  
Daniel Bantoff

**WITNESSES:**

Suzanne Terrell  
Suzanne Terrell  
Julia Raiford  
Julia Raiford  
Karen Y. Lewis  
Karen Y. Lewis

### CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

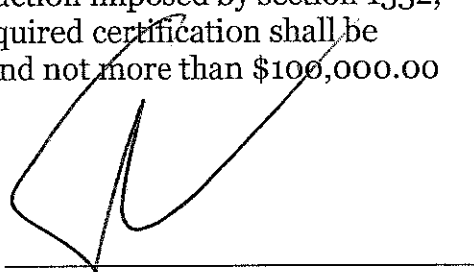
(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of a cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000.00 and not more than \$100,000.00 for each such failure.

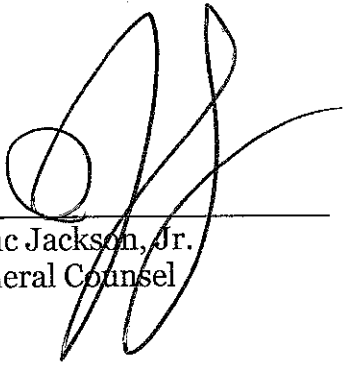
DATE: July 18, 2007

  
\_\_\_\_\_  
Scott A. Angelle, Secretary  
Department of Natural Resources  
State of Louisiana

### CERTIFICATION OF AUTHORITY

I, Isaac Jackson, Jr., do hereby certify that I am the principal legal officer of the Department of Natural Resources for the State of Louisiana, that the Department of Natural Resources for the State of Louisiana is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the U. S. Fish and Wildlife Service and the State of Louisiana in connection with the **WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION PROJECT (TE-46)**, Terrebonne Parish, LA, and that the persons who have executed this Amendment on behalf of the State have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 6<sup>th</sup> day of August, 2007.

  
\_\_\_\_\_  
Isaac Jackson, Jr.  
General Counsel



STATE OF LOUISIANA  
PARISH OF ~~LAFAYETTE~~  
VERMILION

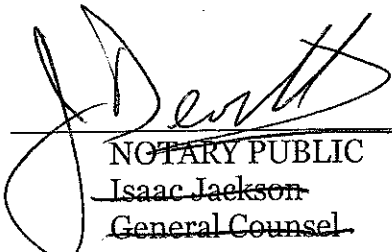
BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said Parish and State aforesaid, on this 13<sup>th</sup> day of AUGUST, 2007, personally came and appeared James F. Boggs who declared that he is the Acting Supervisor of the U.S. Department of Interior, Fish and Wildlife Service, Louisiana Field Office that he executed the foregoing instrument on behalf of said Federal Agency and that the instrument was signed pursuant to the authority granted to him by said Federal Agency and that he acknowledged the instrument to be the free act and deed of said Federal Agency.

  
NOTARY PUBLIC ID# 54334

My commission expires: \_\_\_\_\_  
(SEAL)

STATE OF LOUISIANA  
PARISH OF EAST BATON ROUGE

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said Parish and State aforesaid, on this 18<sup>th</sup> day of JULY, 2007, personally came and appeared Scott A. Angelle, to me known, who declared that he is the Secretary of the Department of Natural Resources, State of Louisiana, that he executed the foregoing instrument on behalf of said State Agency and that the instrument was signed pursuant to the authority granted by him by said State Agency and that he acknowledged the instrument to be the free act and deed of said State Agency.

  
NOTARY PUBLIC  
~~Isaac Jackson~~  
~~General Counsel~~

My commission expires: \_\_\_\_\_  
(SEAL)



James J. Devitt, III  
Notary No. 8973  
State of Louisiana  
Commissioned for Life

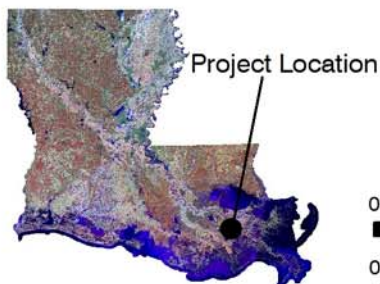
ATTACHMENT II

WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
(TE-46)

**PROJECT FEATURES**



**TE46 - West Lake Boudreaux  
Shoreline Protection and Marsh Creation**



**PROJET FEATURES MAP**



Data Source:  
Coastal Protection and  
Restoration Authority  
Operations Division  
Thibodaux Field Office

2008 DOQQ\_1M\_TC

Date: August 21, 2012

ATTACHMENT III

WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
(TE-46)

**PROJECT COMPLETION REPORT**

# PROJECT COMPLETION REPORT<sup>1</sup>

**PROJECT NAME**

**West Lake Boudreaux Shoreline Protection and Marsh Creation**

**CWPPRA/STATE PROJECT NO.**

**TE-46**

**Report Date:** May 3, 2012

**BY:** Charles Slocum

## 1. Project Managers/Contracting Officer:

<b>CPRA Project Manager</b>	<b>Andrew Beall</b>	<b>Telephone</b>	<b>(225) 342-1952</b>
<b>CPRA Construction Project Manager</b>	<b>Brian Babin</b>	<b>Telephone</b>	<b>(985) 447-0956</b>
<b>CPRA Monitoring Manager</b>	<b>Todd Hubbell</b>	<b>Telephone</b>	<b>(985) 447-0985</b>
<b>Federal Agency Project Manager</b>	<b>Robert Dubois - USFWS</b> <b>John Jurgensen - NRCS</b>	<b>Telephone</b>	<b>(337) 291-3127</b> <b>(318) 473-7694</b>
<b>Federal Agency Contracting Officer</b>	<b>Ralph Broome</b>	<b>Telephone</b>	<b>(318) 473-7781</b>

## 2. Location and description of projects as approved for construction by Task Force.

The West Lake Boudreaux Shoreline Protection and Marsh Creation (TE-46) project is located in Terrebonne Parish along the western side of Lake Boudreaux, south of Bayou Butler and east of Bayou Grand Caillou.

The project's objectives include: reducing erosion of the west Lake Boudreaux shoreline to protect 80 acres of emergent marsh and submerged aquatic vegetation (SAV); maintaining the shallow, open water habitat, including its SAV, located west of the lake rim; and creating 284 acres of marsh along the southwestern shoreline of Lake Boudreaux and at interior marsh sites through the deposition of dredged material. Containment dikes will be used to hold the dredged material in the marsh creation areas. The borrow site, from where the dredged material will be extracted, will be located in Lake Boudreaux east of the project site. In an effort to lessen or halt shoreline erosion, 13,000 linear feet of rock dike will be constructed in three sections along the western shoreline of Lake Boudreaux, from Hog Point south to Hog Point Canal. This will include "fish dips" for the exchange of material, nutrients, and organisms between the interior marsh and the lake's main body. Elsewhere, an earthen plug will be constructed to prevent unwanted water exchange. The project also calls for construction of 4,000 linear feet of earthen dike. In addition, existing openings will be enlarged and/or new openings created in the pumping station spoil bank to facilitate the exchange of water and organisms between the project area's north and south ponds.

## 3. Final, as-built features, boundaries and resulting acreage (use attachments if necessary).

Project features consist of the following:

- 1) 11,644 linear feet of shoreline protection in two sections along the western shoreline of Lake Boudreaux. The structure was built in 2 to 3.5 feet of water and between 0 to 100 feet from shore. A gap, approximately 100 feet wide, was left open for fish access.
- 2) Lake-bottom sediments were hydraulically dredged to create 124 acres of marsh.
- 3) Created marsh was planted with marshhay cordgrass and seashore paspalum within the first year.
- 4) One earthen plug to reduce water exchange between Lake Boudreaux and marsh located in the northern portion of the project area.
- 5) Enlarge existing openings and create new openings in the pumping station canal spoil bank to facilitate water exchange between the north and south ponds.

The exact location and construction dimensions of the project can be seen in the attached "As Built" drawings.

**Actual Benefitted Acres: 277 Acres**

<sup>1</sup>To be filled out at construction completion by either the CPRA Construction Project Manager or the Federal Agency Contracting Officer depending on which organization had lead role for construction of project.

#### 4. Key project cost elements

	CWPPRA Project Cost Estimates**	Cost Incurred as of Construction Completion
Construction	\$ 14,413,543.00	\$ 14,353,786.32
E & D	\$ 1,604,682.00	\$ 1,119,905.13
Landrights	\$ 191,651.00	\$ 191,137.80
Monitoring	\$ 22,572.00	\$ 14,255.31
O & M	\$ 1,664,815.00	\$ 92.96
Total	\$ 17,897,263.00	\$ 15,684,127.52

**\*\* Most recent estimate from CWPPRA Project estimates Report produced by USACOE.**

## 5. Items of work

Item No.	Work	Estimated Quantity	Unit	Estimated Unit Price	Estimated Amount	Unit Bid Price	Bid Amount	Final Quantity	Final Amount	% Over/ Under		
1	Mobilization and Demobilization	1	Job	\$300,000.00	\$300,000.00	\$2,220,000.00	\$2,220,000.00	1	\$2,220,000.00	100.00%		
2	Pollution Control	1	Job	\$30,000.00	\$30,000.00	\$75,000.00	\$75,000.00	1	\$75,000.00	100.00%		
3	Construction Surveys	1	Job	\$60,000.00	\$60,000.00	\$310,000.00	\$310,000.00	1	\$310,000.00	100.00%		
4	Contractor Quality Control	1	Job	\$60,000.00	\$60,000.00	\$280,000.00	\$280,000.00	1	\$280,000.00	100.00%		
5	Excavation, Marsh Creation Dredging	975,000	CY	\$3.23	\$3,149,250.00	\$3.50	\$3,412,500.00	975,000	\$3,412,500.00	100.00%		
6	Rock Riprap	66,000	Ton	\$45.00	\$2,970,000.00	\$67.50	\$4,455,000.00	66000	\$4,455,000.00	100.00%		
7	Geotextile	45,900	SY	\$7.00	\$321,300.00	\$8.80	\$403,920.00	45,900	\$403,920.00	100.00%		
8	Excavation, Flotation Access	1	Job	\$487,250.00	\$487,250.00	\$935,000.00	\$935,000.00	1	\$935,000.00	100.00%		
9	Metal Fabrication, Settlement Plates	18	EA	\$1,000.00	\$18,000.00	\$3,000.00	\$54,000.00	18	\$54,000.00	100.00%		
10	Earthfill, Earthen Plug	1	Job	\$10,000.00	\$10,000.00	\$29,580.00	\$29,580.00	1	\$29,580.00	100.00%		
11	Earthfill, Containment Dike, Open Marsh Area	1	Job	\$384,750.00	\$384,750.00	\$975,000.00	\$975,000.00	1	\$975,000.00	100.00%		
12	Identification Markers and Plaques, Permanent Warning Signs	4	EA	\$2,500.00	\$10,000.00	\$4,250.00	\$17,000.00	4	\$17,000.00	100.00%		
			Total Estimate			\$7,800,550.00	Total Bid		\$13,167,000.00		\$13,167,000.00	

Modifications										
M1	This mod is to remove drawing sheet 4of 65 and replace with drawing sheet 4M1 of 65									
							<b>Total Modification #1</b>	<b>\$0.00</b>		
M2	This mod is to Increase CLIN 12 from 4 to 5 and dollar value from \$17,000.00 to \$21,250.00 - Revise Construction Specification 7 - Remove and replace drawing sheets									
12A	Identification Markers and Plaques, Permanent Warning Signs	1	EA			\$4,250.00	\$4,250.00	1	\$4,250.00	100.00%
							<b>Total modification #2</b>	<b>\$4,250.00</b>		
M3	Adds CLIN 13									
13	Excavation, Borrow South Containment Dike (Rock Dike)	1	Job			\$12,650.00	\$12,650.00	1	\$12,650.00	100.00%
							<b>Total Modification #3</b>	<b>\$12,650.00</b>		
M4	Increase the quantity of geotextile by 6,150 SY									
7A	Geotextile	6,150	SY			\$8.80	\$54,120.00	6,150	\$54,120.00	100.00%
							<b>Total Modification #4</b>	<b>\$54,120.00</b>		
M5	This mod removes the requirement to use nuclear meter from the contract									
1A	Mobilization and Demobilization	1	LS			-\$21,403.00	-\$21,403.00	1	-\$21,403.00	100.00%
							<b>Total Modification #5</b>	<b>-\$21,403.00</b>		
M6	This mod add CLIN 14 to the contract									

14	Excavation South Floation Channel	1	Job			\$180,500.00	\$180,500.00	1	\$180,500.00	100.00%
							<b>Total Modification #6</b>		<b>\$180,500.00</b>	
M7	This is a no cost mod to eliminate crossing of the pipeline									
							<b>Total Modification #7</b>		<b>\$0.00</b>	
M8										
5A	Excavation, Marsh Creation Dredging	195,387	CY			\$3.50	\$683,854.50	195387	\$683,854.50	100.00%
							<b>Total Modification #8</b>		<b>\$683,854.50</b>	
M9	Administrative mod to correct the dollar amount of the contract									
5B	Excavation, Marsh Creation Dredging	1				-\$0.50	-\$0.50	1	-\$0.50	100.00%
							<b>Total Modification #9</b>		<b>-\$0.50</b>	
M10	This mod is to add CLIN 15 to the contract - purpose is for NRCS portion of mitigation work performed by contractor									
15	Marsh Repairs	1	Job			\$80,000.00	\$80,000.00	1	\$80,000.00	100.00%
							<b>Total Modification #10</b>		<b>\$80,000.00</b>	
M11	To deobligate and close out contract									
							<b>Total Modification #11</b>		<b>-\$261,926.80</b>	
							<b>Total Cost of Contract</b>		<b>\$13,899,044.20</b>	

## 6. Construction and construction oversight

<b>Prime construction contractor</b>	<b>Inland Dredging Co., LLC</b>
<b>Subcontractor</b>	<b>Choctaw Transportation Company</b>
<b>Subcontractor</b>	<b>Bertucci Contracting Company, LLC</b>
<b>Subcontractor</b>	<b>Manson Gulf</b>
<b>Subcontractor</b>	<b>Wilco Marsh Buggies</b>
<b>Original construction contract</b>	<b>\$ 13,167,000.00</b>
<b>Change orders</b>	<b>\$ 732044.20</b>
<b>Final construction contract</b>	<b>\$ 13,899,044.20</b>

<b>Const. oversight contractor</b>		<b>Const. amt.</b>	<b>\$</b>
<b>Cons. O.S./Admin. agency</b>	<b>NRCS</b>	<b>Est. amt.</b>	<b>\$</b>

## 7. Major equipment used.

4600 Manutowoc Crane	330 Excavator Marsh Buggy (3)	AB-4 Spud Barge
71-B Bucyrus Erie Crane	330 LK Excavator	AB-5 Spud Barge
330-B Bucyrus Erie Crane	24-inch Suction dredge Boat Ingenuity	Various rock barges
88-B Bucyrus Crane	Tug Julie Marie	

## 8. Discuss construction sequences and activities, problems encountered, solutions to problems, etc.

The subcontractor Wilco arrived with two marsh buggies and proceeded to build the containment dike starting with the north containment site and then to the central and south sites. Next the subcontractor Manson Gulf brought in a dredge and dug the access channels. Next the subcontractors Choctaw Transportation and Burtuci began to build the rock dike along the west bank of Lake Boudreaux starting at sta. 0+00 and continued up station. After building the containment dike and waiting the required 60 days for dewatering, the contractor brought in the 24 in suction dredge Ingenuity and began filling the containment sites starting with the northern site and working south. After finishing the subcontractor Manson Gulf moved in and backfilled all access channels.

The only major problem encountered was the damage done by Wilco Marsh Buggies. Upon arrival at the site, Wilco tracked through open marsh to get to the northern containment dike. At the end of construction the tracks were filled in with dredge material to the satisfaction of the landowner.

**Marsh Creation:**

1. Excavate and place spoils as required for containment dike.
2. Place spoil from access flotation.
3. Pump in spoil from borrow area.

**Construction of rock riprap dike**

1. Excavate and place spoil as required for access flotation.
2. Place geotextile that will be underneath the rock riprap.

Place rock riprap

**9. Construction change orders and field changes.**

Modification #1: This modification is to the replacement of drawing sheet 4 of 65 with drawing sheet 4M1 of 65. This is a no cost modification result is no net increase to the contract.

Modification #2: This modification allowed adjustment of the containment dike and south marsh creation area as proposed by contractor and increases bid item 12, ID Markers.

This modification result in a net increase to the contract of \$4,250.00.

Modification #3: This modification allowed for excavation from the interior marsh area to provide material for construction of the earthen containment dikes running parallel to the rock dikes from station 412+50 to 414+25.

This modification results in a net increase to the contract of \$12,650.00.

Modification #4: This modification allows the quantity of geotextile to be increased by 6,150 SY.

This modification results in a net increase to the contract of \$54,120.00.

Modification #5: This modification allows by mutual agreement to remove the use of nuclear meter from construction specification 21.

This modification results in a net decrease to the contract of (\$21,403.00).

Modification #6: This modification allowed 3,000 feet of dredging excavation for floatation access to the remaining 600 feet of the unconstructed rock dike.

This modification results in a net increase to the contract of \$180,500.00.

Modification #7: This modification is to eliminate the crossing of the pipeline.

This is a no cost modification results in no increase to the contract.

Modification #8: This modification was needed to increase line item quantity from 975,000 cy to 1,170,387 cy.

This modification results in a net increase to the contract of \$683,854.50.

Modification #9: This is an administrative mod to correct the contract dollar amount.

This modification results in a net decrease to the contract of (\$0.50).

Modification #10: This modification was for mitigation work performed by the contractor as a result of contractor tracking equipment in the marsh area outside the work area.

This modification results in a net increase to the contract of \$80,000.00.

Modification #11: This mod is to de-obligate remaining balance from contract and close the contract.

This modification results in a net decrease to the contract of (\$261,926.80).



**10. Pipeline and other utility crossings.**

<u>Structure</u>	<u>Owner</u>	<u>Rep. To Contact</u>
Pipeline	Crosstex	Mr. Mike Girard 311 Paterson Street Lafayette, La 70501 (985) 804-3721
Pipeline	Gulf South	Mr. Joe Breaux 110 Park Place Suite 100 Covington, LA 70433 (985) 804-3680

**11. Safety and Accidents.**

NONE

**12. Additional comments pertaining to construction, completed project, etc.**

Construction of all project features is complete and all disputes between NRCS and the contractor have been resolved. Mitigation for damage to adjacent marsh (approximately 1 acre) by marsh buggy has also been resolved by restoring approximately 1 acre of marsh and nourishing nearly 5 acres of marsh with small hydraulic dredge. Last remaining issue is degrading containment dikes, which should be completed in early 2011.

**13. Significant Construction Dates: To be filled out by CPRA Construction Project Manager or Contracting Officer for construction for Agency responsible for construction.**

	<u>Date</u>	<u>Bid I.D.</u>
<b>Bid I.D. (Construction, Vegetation, etc.)</b>		<b>AG-7217-S-07-0060</b>
<b>Bid Opening</b>	<b>4-24-2007</b>	
<b>Construction Contract Award</b>	<b>7-20-2007</b>	<b>AG-7217-C-07-0110</b>
<b>Preconstruction Conference</b>	<b>7-24-2007</b>	
<b>Notice to Proceed</b>	<b>7-1-2007</b>	
<b>Mobilization</b>	<b>8-1-2007</b>	
<b>Construction Start</b>	<b>7-24-2007</b>	
<b>Construction Completion</b>	<b>10/30/2009</b>	
<b>Final Acceptance</b>	<b>10/30/2009</b>	

If different bids are taken, repeat this table to individually reflect each bid and attach tables.

**Other significant Project Dates**

	<u>Date</u>
Project Implementation closeout**	_____
Start of Preconstruction Monitoring***	_____
Preconstruction Aerial Photography Acquisition***	_____
Monitoring Plan Completion***	_____

\*\* Final implementation closeout is made by either the CPRA Project Manager or the Federal Agency Contracting Officer depending on which organization had lead role for construction of project.

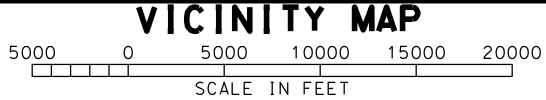
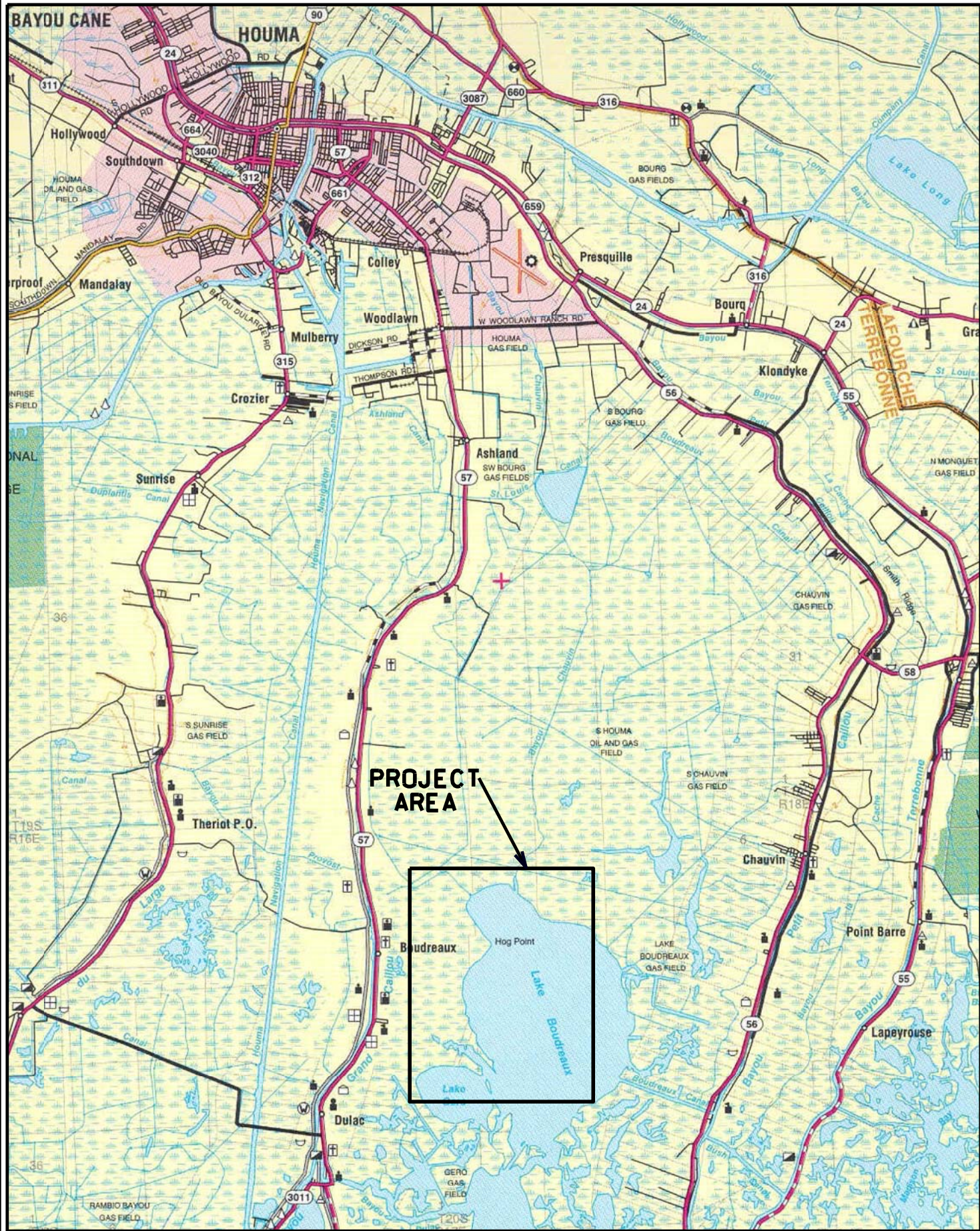
\*\*\* To be completed by CPRA Project Manager.

ATTACHMENT IV

WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
(TE-46)

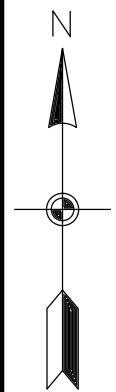
**AS-BUILT DRAWINGS**





MAPS COPYRIGHT "THE ROADS OF LOUISIANA". SHEARER PUBLISHING

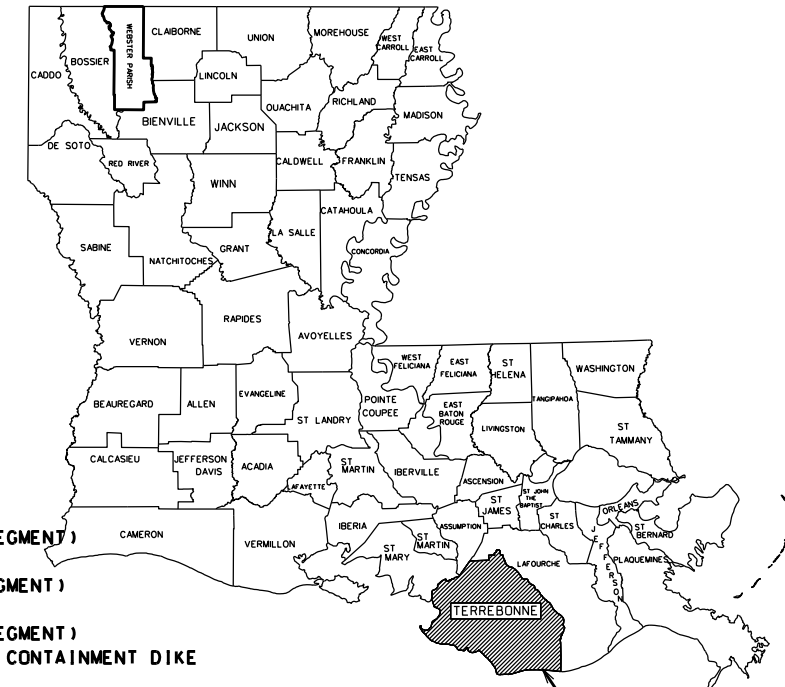
WEST LAKE BOUDREAUX  
SHORELINE PROTECTION AND MARSH CREATION  
PROJECT TE-46  
BUILT UNDER  
COASTAL WETLANDS, PLANNING, PROTECTION AND RESTORATION ACT  
PUBLIC LAW 101-646  
BY THE  
UNITED STATES FISH AND WILDLIFE SERVICE  
OF THE  
UNITED STATES DEPARTMENT OF INTERIOR  
WITH THE ASSISTANCE OF  
NATURAL RESOURCES CONSERVATION SERVICE  
OF THE  
UNITED STATES DEPARTMENT OF AGRICULTURE  
2006



INDEX TO DRAWINGS

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3	LANDOWNER LISTINGS
4	PROJECT MAP
5	PLAN MAP-ROCK DIKE NORTHERN SEGMENT
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11	PLAN MAP-ROCK DIKE CENTRAL SEGMENT
12&13	PLAN AND PROFILE-ROCK DIKE (CENTRAL SEGMENT)
14	PLAN MAP-ROCK DIKE SOUTHERN SEGMENT
15-19	PLAN AND PROFILE-ROCK DIKE (SOUTHERN SEGMENT)
20&21	TYPICAL SECTIONS - ROCK DIKE & EARTHEN CONTAINMENT DIKE
22&23	DETAILS - CHOKE DOWN SECTION
24	PLAN MAP - MARSH CREATION (NORTHERN SECTION)
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28	PROFILE #4 & PROFILE #5
29	PROFILE #6 & PROFILE #7
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34	PROFILE #13 & PROFILE #14
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44	SETTLEMENT PLATE DETAILS
45	WARNING SIGN DETAILS
46-48	EARTHEN PLUG DETAILS
49-65	SOIL BORING LOGS

"AS-BUILT"



LOCATION IN LOUISIANA  
TERREBONNE PARISH  
"AS-BUILT PLANS"  
SUBMITTED BY: WARREN J. BLANCHARD 10/11/2011  
GOVERNMENT REPRESENTATIVE DATE  
APPROVED BY: ASSISTANT STATE CONSERVATION DATE  
ENGINEER  
MARI GILFORD 07/27/2012  
STATE CONSERVATION ENGINEER DATE  
CONTRACT NO. 46-7217-G-07-0110 DATE  
CONTRACTOR INLAND DREDGING COMPANY LLC  
INSPECTOR \_\_\_\_\_  
DATE OF COMPLETION \_\_\_\_\_

REVISIONS			
NO.	DATE	APPROVED	TITLE

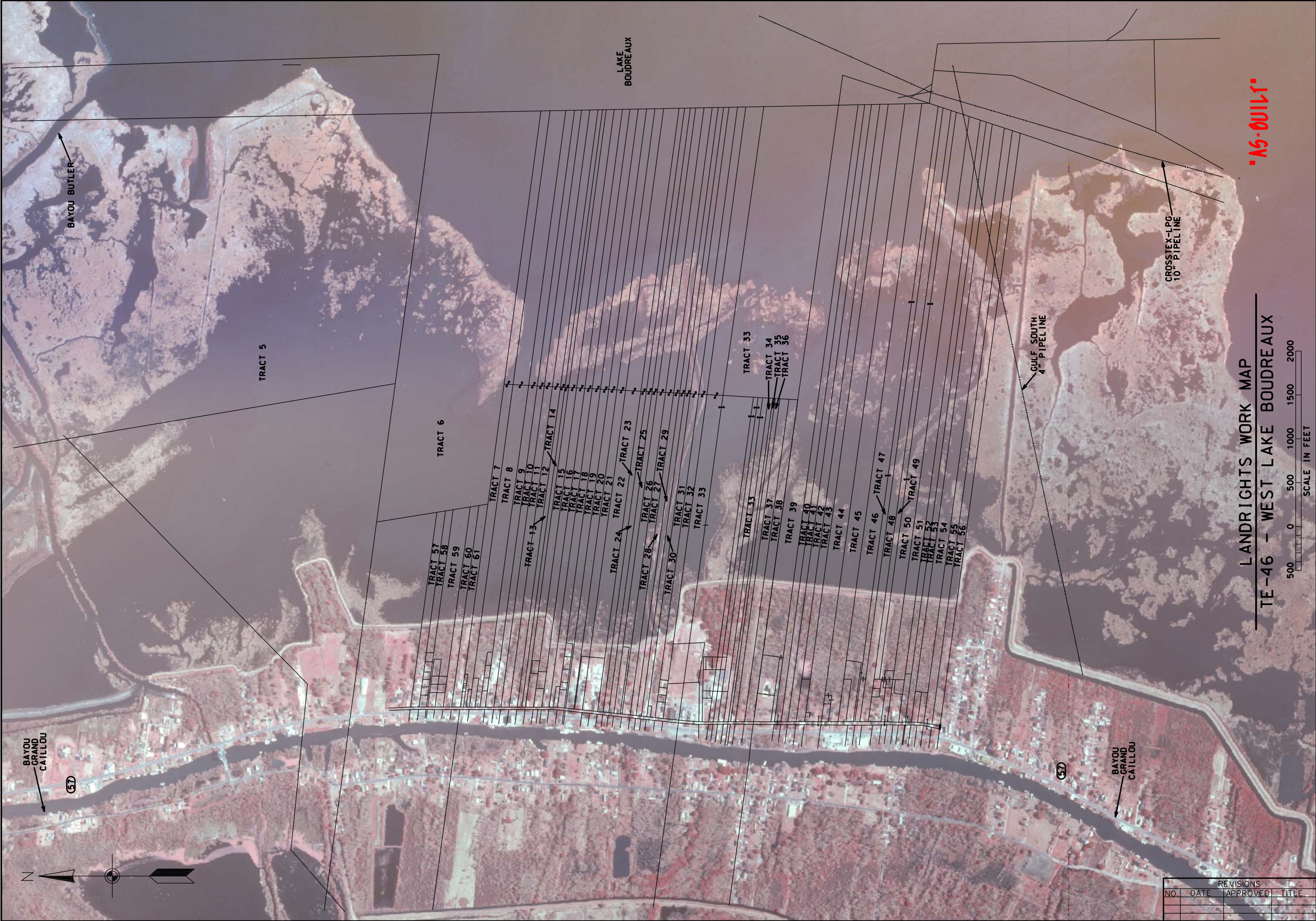
COVER SHEET  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

Natural Resources Conservation Service  
United States Department of Agriculture

DESIGNED	R. FAULKNER	DATE	01/05
DRAWN	A.J. GREMILLION		01/05
CHECKED	B.A. STICKER		06/06
APPROVED	E.J. GIERING III		12/06

FILE NAME  
LA-346  
DRAWING NAME  
LA346001.dgn  
SHEET 01 of 65





'A5-0011'

CROSSTEX-LPG  
10" PIPELINE

GULF SOUTH  
4" PIPELINE

LANDRIGHTS WORK MAP  
TE-46 - WEST LAKE BOUDREAU

SCALE IN FEET  
500 0 500 1000 1500 2000



Natural Resources Conservation Service  
United States Department of Agriculture

FILE NAME  
LA-346

DRAWING NAME  
LA346002.dgn

SHEET 02 of 65

REVISIONS			
NO.	DATE	APPROVED	TITLE

LANDRIGHTS MAP  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

DESIGNED	R. FAULKNER	DATE	01/05
DRAWN	A.J. GREMLION		01/05
CHECKED	B.A. STICKER		06/06
APPROVED	E.J. GIERING III		12/06



TRACT #5	XXX
TRACT #6	XXX
TRACT #7	CLAUDE P. PRICE
TRACT #8	XXX
TRACT #9	LAURA PORCHE AUTHEMENT
TRACT #10	LARRY AUTHEMENT
TRACT #11	PEGGY DUPLANTIS,ET AL
TRACT #12	CALVIN J. AUTHEMENT
TRACT #13	CALVIN J. AUTHEMENT
TRACT #14	KIM A. DOMANGUE
TRACT #15	DEBORAH CARNEY HEBERT
TRACT #16	REINALDO R. BEAL
TRACT #17	ERIC J. CARLOS
TRACT #18	KENNIE DWIGHT MARYLAND
TRACT #19	WILSON DUPLANTIS
TRACT #20	THE CONGREGATION OF THE H
TRACT #21	ROBERT J. BOUDREAUX, ET A
TRACT #22	ROBERT J. BOUDREAUX, ET A
TRACT #23	CLEUS C. BERGERON SR.
TRACT #24	MRS. BERTHA A. BOUDREAUX
TRACT #25	DUPLANTIS EXPLORATION, INC.
TRACT #26	EUNICE BLANCHARD VOISIN
TRACT #27	JAMES J. COLLINS, JR.,ET
TRACT #28	BRYAN W. VOISIN
TRACT #29	WESLEY JOHN FITCH
TRACT #30	YVONNE CHAUVIN AUTHEMENT
TRACT #31	SIDNEY HEBERT
TRACT #32	LAWRENCE LUKE
TRACT #33	LL&E/ BURLINGTON RESOURC
TRACT #34	ANTOINE H. BOURG
TRACT #35	JAMES J. CARLOS
TRACT #36	ESTATE OF JAMES J. CARLOS
TRACT #37	XXX
TRACT #38	XXX
TRACT #39	XXX
TRACT #40	ESTHER C. GUIDRY ET AL
TRACT #41	MDAH P. ORDOYNE
TRACT #42	PATRICIA CHARLES
TRACT #43	TRAVIS J. LUKE ET AL
TRACT #44	XXX
TRACT #45	XXX
TRACT #46	XXX
TRACT #47	XXX
TRACT #48	ROBERT J. BOUDREAUX, SR.
TRACT #49	XXX
TRACT #50	XXX
TRACT #51	RYAN PROPERTIES INC., ET
TRACT #52	RYAN PROPERTIES INC., ET
TRACT #53	JEROME JOSEPH FANGUY
TRACT #54	ABEL J. BOUDREAUX, ET AL
TRACT #55	CAMILLE J. COLLINS
TRACT #56	EDDIE VOISIN, JR.
TRACT #57	GLYNN J. DUPLANTIS
TRACT #58	PERCY PETER DUPLANTIS
TRACT #59	XXX
TRACT #60	JESSIE C. SCOTT, ET AL
TRACT #61	WILBERT JOS. MARONGE

REVISIONS			
NO.	DATE	APPROVED	TITLE

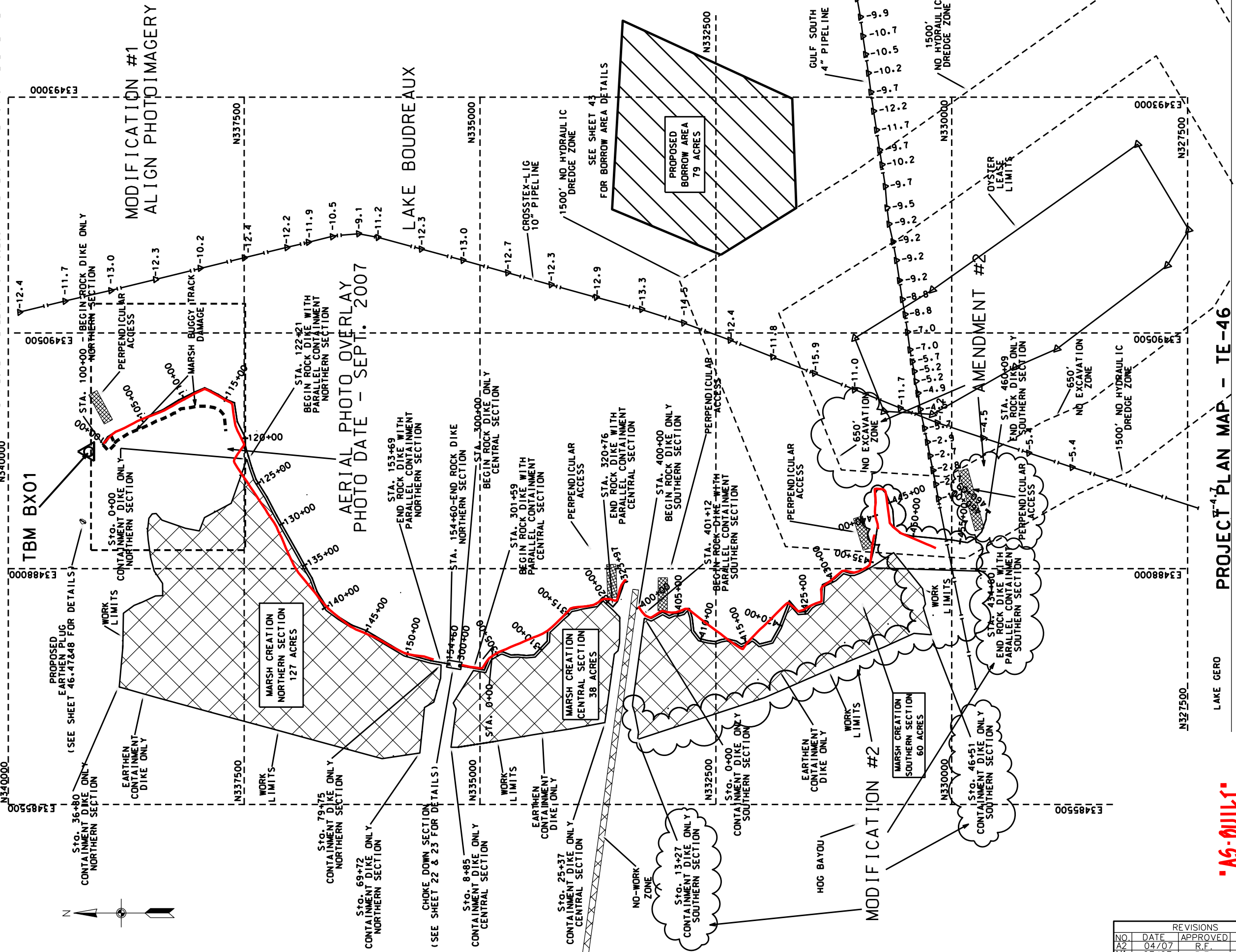
LA-00111

TBM	NORTHING	EASTING	ELEV.	DESCRIPTION
TBM BX01	339142.82	3489241.45	3.12	2" DIA. CROSSHATCH POST
TBM BX02	333444.62	3487037.07	3.02	2" DIA. CROSSHATCH POST


NOTES:  
HORIZONTAL DATUM: NAD83, LOUISIANA STATE COORDINATE SYSTEM SOUTH ZONE  
VERTICAL DATUM: NAVD88  
AERIAL PHOTO BASE FLOWN 2005 (POST STORM)  
MODIFICATION #2

MODIFICATION #2

- NOTES:  
1. SEE SHEETS 24-31, AND 35 FOR DETAILED MARSH CREATION PLANS.  
2. SEE SHEETS 5 THRU 19 FOR DETAILS OF ROCK DIKE WITH PARALLEL EARTHEN CONTAINMENT. SHOWN NEXT TO THE PIPELINES ARE THE TOP OF PIPE ELEVATION.  
3. THE NUMERICAL VALUE SHOWN NEXT TO THE PIPELINES ARE THE TOP OF PIPE ELEVATION.  
4. NO EXCAVATION WILL BE ALLOWED WITHIN 550' OF THE OYSTER LEASE LIMITS.  
5. THE EARTHEN CONTAINMENT DIKES ARE SHOWN WITH TWO STATIONINGS. THE EARTHEN CONTAINMENT DIKE ONLY STATIONS BEGIN AND END AT THE INTERSECTION OF THE ROCK DIKE, THE PARALLEL CONTAINMENT DIKE HAS THE SAME STATIONS AS THAT OF THE ROCK DIKE.  
6. PERPENDICULAR ACCESS ARE SHOWN FOR LOCATION RELATIVE TO THE BANKLINE. THE LENGTH OF ACCESS MAY EXTEND FURTHER INTO THE LAKE AREA.



REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.
M1	07/07	R.F.	D.E.
M2	07/07	R.F.	D.E.



Natural Resources Conservation Service  
United States Department of Agriculture

PROJECT PLAN MAP  
TE-46 - WEST LAKE BOUDREUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

FILE NAME  
LA-346

DRAWING NAME  
LA346004M2.dgn

DESIGNED  
R. FAULKNER

DRAWN  
A.J. GREMILLION

CHECKED  
B.A. STICKER

APPROVED  
E.J. GIERING III

DATE  
01/05

01/05

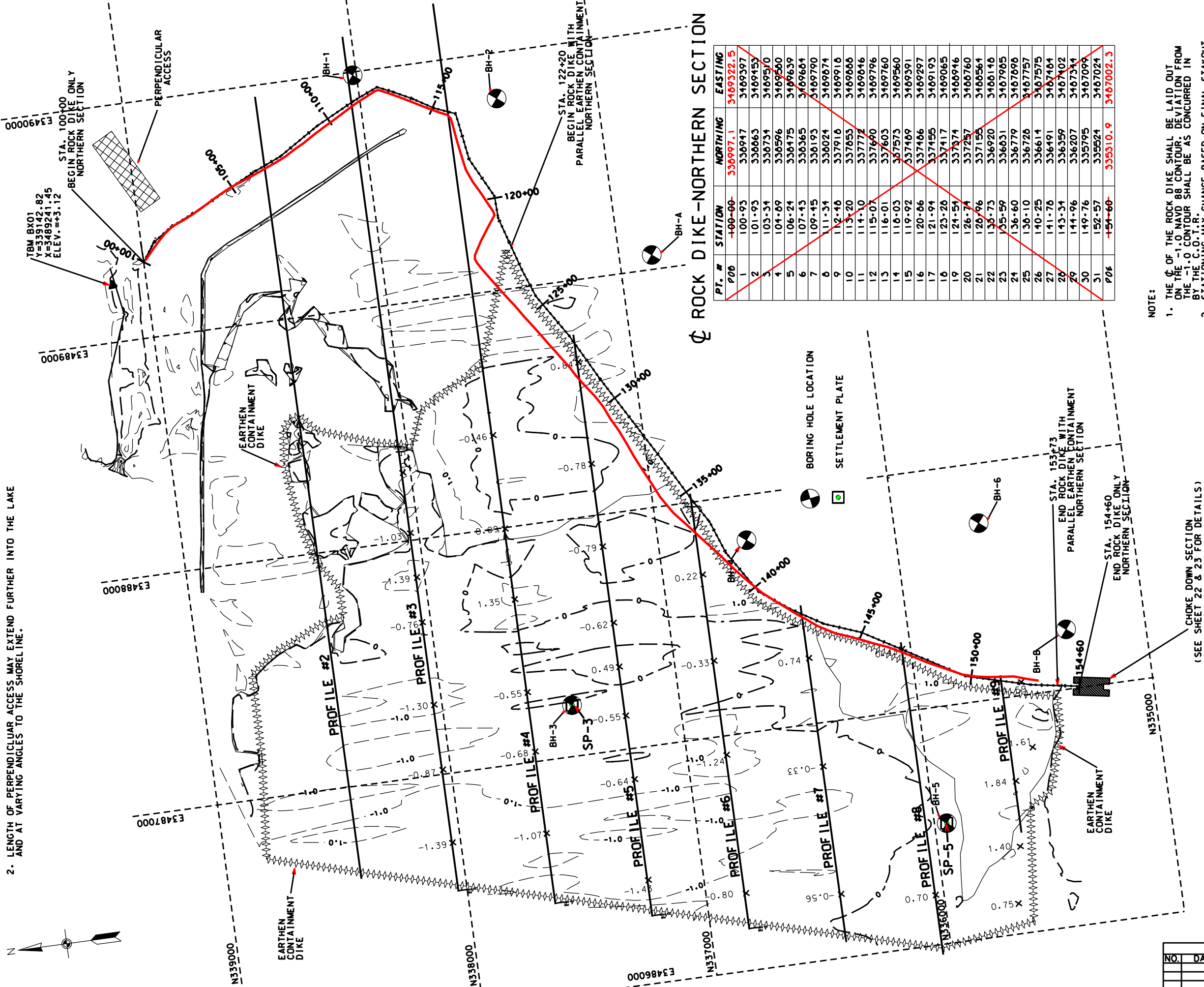
06/06

12/06

SHEET 04M2 of 65

NOTE:

1. MATERIAL EXCAVATED TO CONSTRUCT THE FLOTATION ACCESS CHANNEL ON THE NORTHERN SECTION, FROM STA. 100+00 - STA. 122+20 SHALL BE PLACED ON THE LAKE SIDE AND PULLED BACK INTO THE FLOTATION ACCESS CHANNEL PRIOR TO FINAL INSPECTION AND ACCEPTANCE. SEE TYPICAL SECTION #4, SHEET 21 OF 65.
2. LENGTH OF PERPENDICULAR ACCESS MAY EXTEND FURTHER INTO THE LAKE AND AT VARYING ANGLES TO THE SHORELINE.



Ø ROCK DIKE-NORTHERN SECTION

PT. #	STATION	NORTHING	EASTING
P00	+00-00	336997.1	3469322.5
1	100+93	336947	3469397
2	101+93	336063	3469453
3	103+34	336734	3469570
4	104+09	336596	3469500
5	106+24	336175	3469639
6	107+43	336365	3469604
7	109+45	336193	3469790
8	111+34	336024	3469874
9	112+16	337916	3469916
10	113+20	337853	3469888
11	114+10	337772	3469816
12	115+07	337690	3469796
13	116+01	337603	3469760
14	116+03	337573	3469560
15	119+92	337469	3469391
16	120+06	337406	3469297
17	121+94	337455	3469193
18	123+20	337417	3469065
19	124+54	337374	3468946
20	126+74	337257	3468760
21	128+96	337156	3468564
22	130+73	336920	3468148
23	135+59	336031	3467985
24	136+60	336779	3467898
25	138+10	336726	3467757
26	140+25	336614	3467575
27	141+78	336491	3467484
28	143+34	336359	3467402
29	144+96	336207	3467344
30	149+76	335795	3467099
31	152+57	335524	3467024
P08	+54-60	335310.9	3467002.3

NOTE:

1. THE Ø OF THE ROCK DIKE SHALL BE LAID OUT ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM THE -1.0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES. THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.
3. THE TOPO SHOWN IS FROM PRE-HURRICANE SURVEYS. THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.
5. PT. NO. 1 THRU NO. 31 HAVE CHANGED DUE TO -1.0' CONTOUR. ALSO THE STATIONING HAS CHANGED ON THE ROCK DIKE.

WEST LAKE BOUDREAUX - ROCK DIKE  
NORTHERN SECTION - PLAN VIEW



CHOKEDOWN SECTION  
(SEE SHEET 22 & 23 FOR DETAILS)



PLAN VIEW-NORTHERN ROCK DIKE  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

File Name  
LA-346

Drawing Name  
LA346005.dgn

Designed  
R. FAULKNER  
01/05

Drawn  
A.J.J. GREMILLION  
01/05

Checked  
B.A. STICKER  
06/06

Approved  
E.J.J. GIERING III  
12/06



MATERIAL EXCAVATED TO CONSTRUCT THE FLOTATION ACCESS CHANNEL ON THE NORTHERN SECTION, FROM STA. 100+00 - STA.122+21 SHALL BE PLACED ON THE LAKE SIDE AND PULLED BACK INTO THE FLOTATION ACCESS CHANNEL PRIOR TO FINAL INSPECTION. SEE TYPICAL SECTION #4, SHEET 21 of 65.



X=3489548.50  
Y=338997.30

TEMPORARY  
SPOIL  
PLACEMENT

**TEMPORARY  
WARNING  
SIGN**

TEMPORARY  
WARNING  
SIGN

FLOTATION  
ACCESS  
CHANNEL

**FLOTATION  
ACCESS  
CHANNEL**

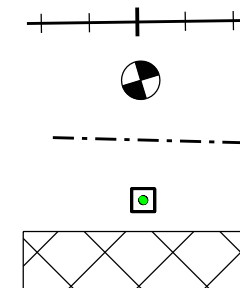
TBM BX01

STA. 100+00 - POB (BEGIN ROCK DIKE-NORTHERN SECTION)  
N=338997.07, E=3489322.46  
THIS POINT MAY BE ADJUSTED IN THE FIELD BY THE CONTR.

**PLAN NORTHERN SECTION**  
**STATION 100+00 - 112+00**



### LEGEND



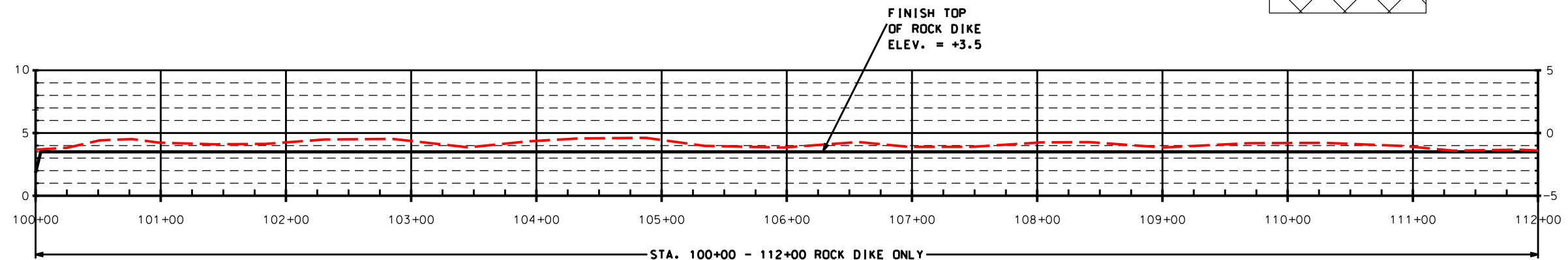
¢ OF ROCK DIKE

**BORING HOLE LOCATION**

TOE OF ROCK DIKE

### SETTLEMENT PLATE

FLOTATION ACCESS CHANNEL



### PROFILE - NORTHERN SECTION STATION 100+00 - 112+00

1. THE  $\phi$  OF THE ROCK DIKE SHALL BE LAID OUT ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM THE -1.0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.

DATUM: ALL HORIZONTAL COORDINATES - NAD83  
ALL VERTICAL COORDINATES - NAVD88

NOTE: STATIONING OF THE ROCK DIKE HAS CHANGED.

**NOTE:**  
TEMPORARY WARNING SIGNS SHALL BE PLACED IN THE FIELD  
AS CONCURRED IN BY THE COTR. SPACING SHALL NOT EXCEED  
500'. SEE SHEET 45 OF 65 FOR WARNING SIGN DETAILS.

REVISIONS			
NO.	DATE	APPROVED	TITLE

Designed	Date
R. FAULKNER	01/05
Drawn	
A.J. GREMILLION	01/05
Checked	
B.A. STICKER	06/06
Approved	
E.J. GIERING III	12/06

PLAN & PROFILE-ROCK DIKE- NORTHERN SEC.  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



**NRCS**  
Natural Resources Conservation Service  
United States Department of Agriculture

**File Name**  
**LA-346**

Drawing Name
LA346006.dgn

Sheet 06 of 65

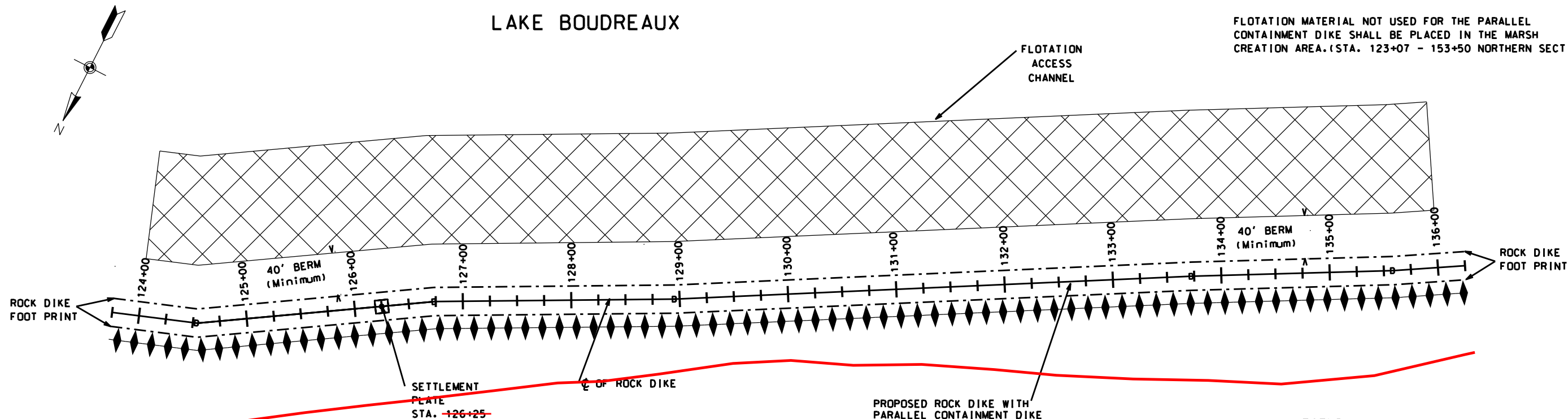




LAKE BOUDREUX

NOTE:

FLOTATION MATERIAL NOT USED FOR THE PARALLEL  
CONTAINMENT DIKE SHALL BE PLACED IN THE MARSH  
CREATION AREA.(STA. 123+07 - 153+50 NORTHERN SECTION)



NOTE:

1. THE  $\phi$  OF THE ROCK DIKE SHALL BE LAID OUT ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM THE -1.0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.

PLAN NORTHERN SECTION  
STATION 124+00 - 136+00



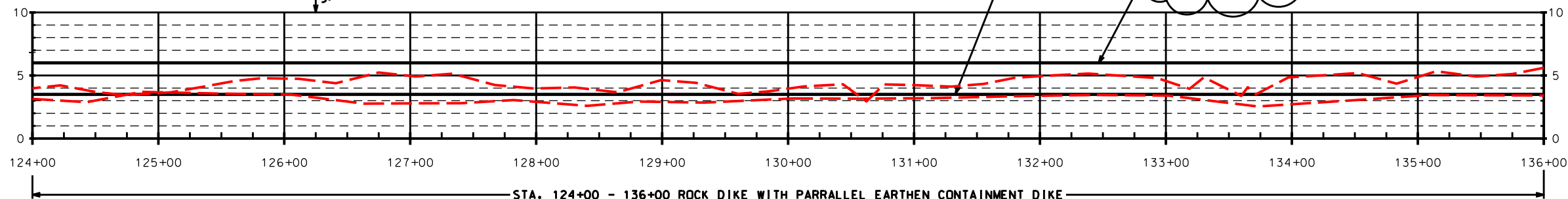
LEGEND

- $\phi$  OF ROCK DIKE
- BORING HOLE LOCATION
- TOE OF DIKE
- SETTLEMENT PLATE
- FLOTATION ACCESS CHANNEL
- PROPOSED CONTAINMENT DIKE ONLY
- ROCK DIKE W/PARALLEL CONTAINMENT DIKE

AMENDMENT #2

FINISH TOP  
OF ROCK DIKE  
ELEV. = +3.5

FINISH TOP  
OF CONTAINMENT DIKE  
AS REQUIRED



PROFILE - NORTHERN SECTION  
STATION 124+00 - 136+00

"AS-BUILT"

NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.

DATUM: ALL HORIZONTAL COORDINATES - NAD83  
ALL VERTICAL COORDINATES - NAVD88

Date	01/05
Designed	R. FAULKNER
Drawn	A.J.J. GREMILLION
Checked	A.J.J. GREMILLION
Approved	A.J.J. GREMILLION

PLAN & PROFILE-ROCK DIKE- NORTHERN SEC.  
TE-46 - WEST LAKE BOUDREUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

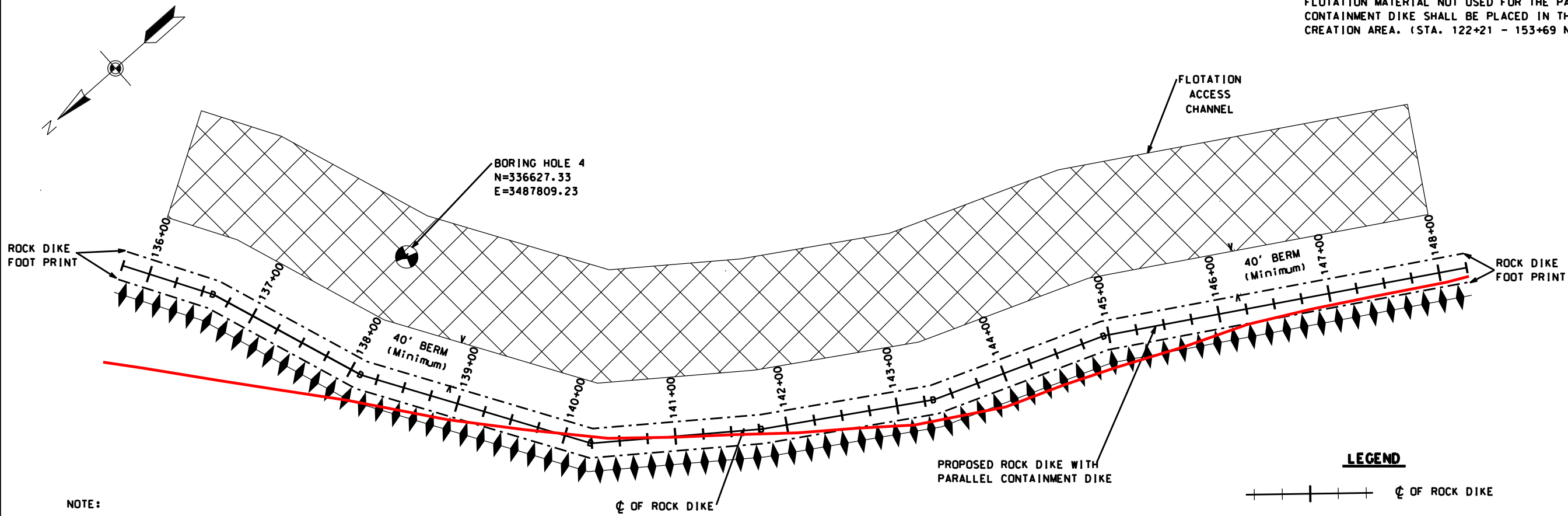


File Name	LA-346
Drawing Name	LA346008A2.dgn
Sheet	08A2 of 65

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.

LAKE BOUDREAUX

NOTE:  
FLOTATION MATERIAL NOT USED FOR THE PARALLEL  
CONTAINMENT DIKE SHALL BE PLACED IN THE MARSH  
CREATION AREA. (STA. 122+21 - 153+69 NORTHERN SECTION)

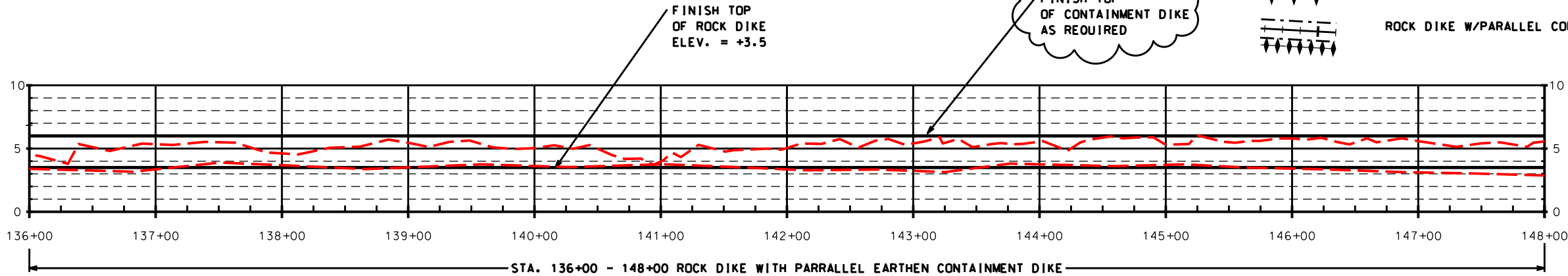
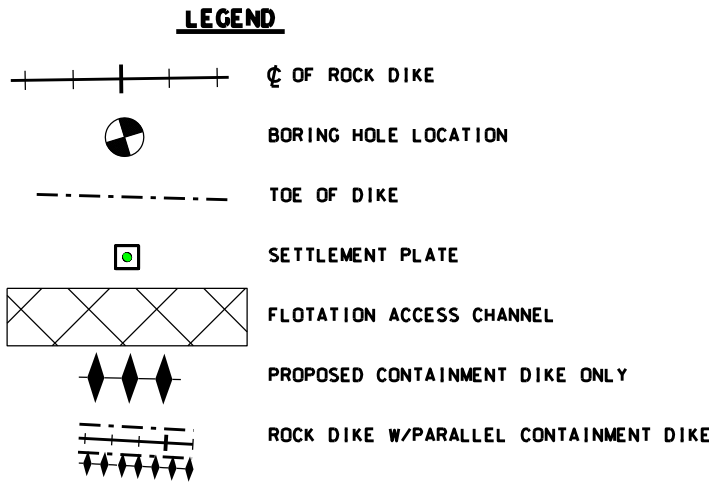


- NOTE:
1. THE  $\phi$  OF THE ROCK DIKE SHALL BE LAID OUT ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM THE -1.0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
  2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
  3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.

PLAN NORTHERN SECTION  
STATION 136+00 - 148+00



AMENDMENT #2



PROFILE - NORTHERN SECTION  
STATION 136+00 - 148+00

"AS-BUILT"

NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.

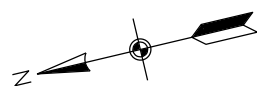
REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.

Date	01/05
Designed	R. FAULKNER
Drawn	A.J. GREMILLON
Checked	B.A. STICKER
Approved	E.J. GIERING III

PLAN & PROFILE-ROCK DIKE- NORTHERN SEC.  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name	LA-346
Drawing Name	LA346009A2.dgn
Sheet	09A2 of 65



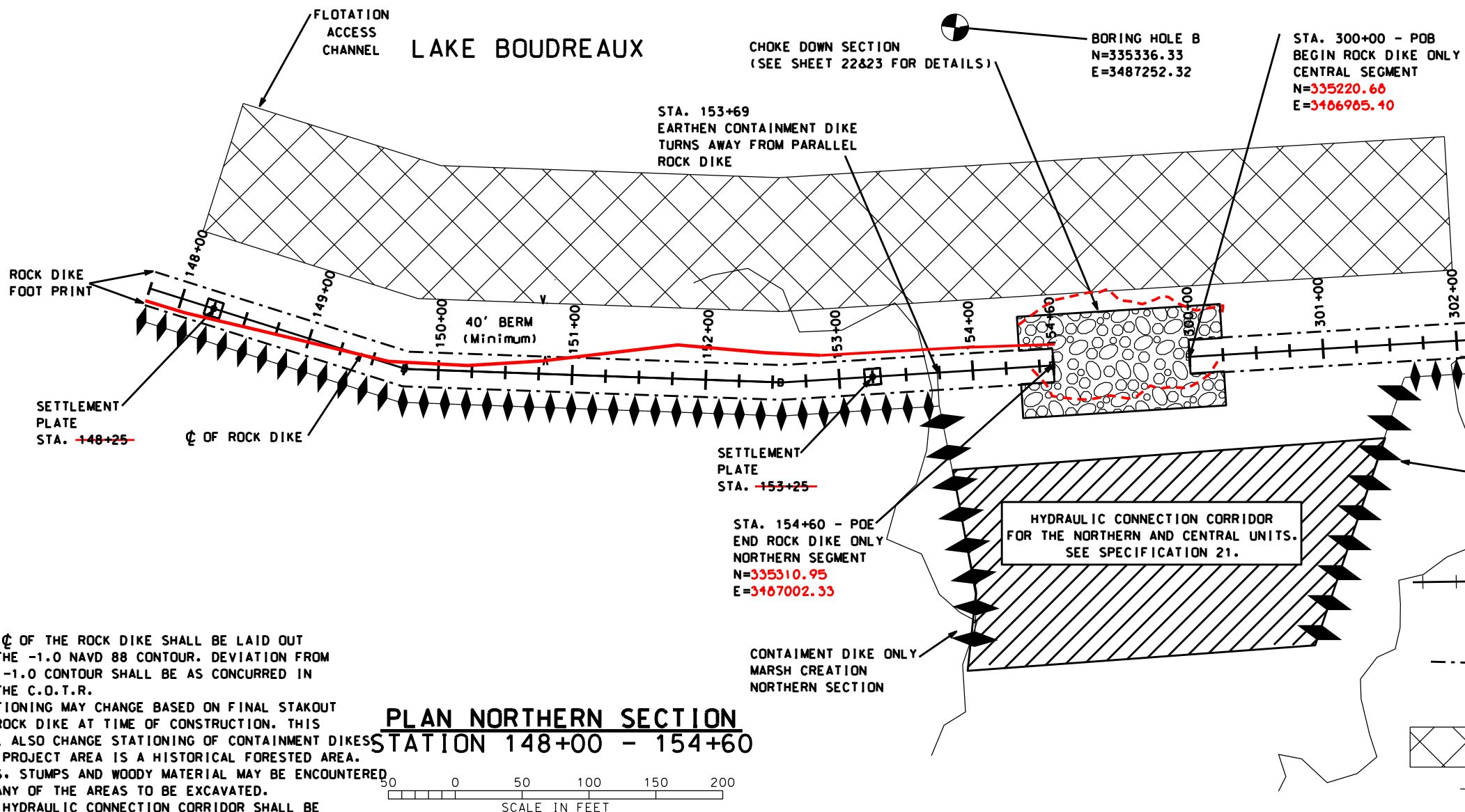
NOTE:

FLOTATION MATERIAL NOT USED FOR THE PARALLEL  
CONTAINMENT DIKE SHALL BE PLACED IN THE MARSH  
CREATION AREA. (STA. 122+21 - 153+69 NORTHERN SECTION)

TEMPORARY  
WARNING  
SIGN

BORING HOLE B  
N=335336.33  
E=3487252.32

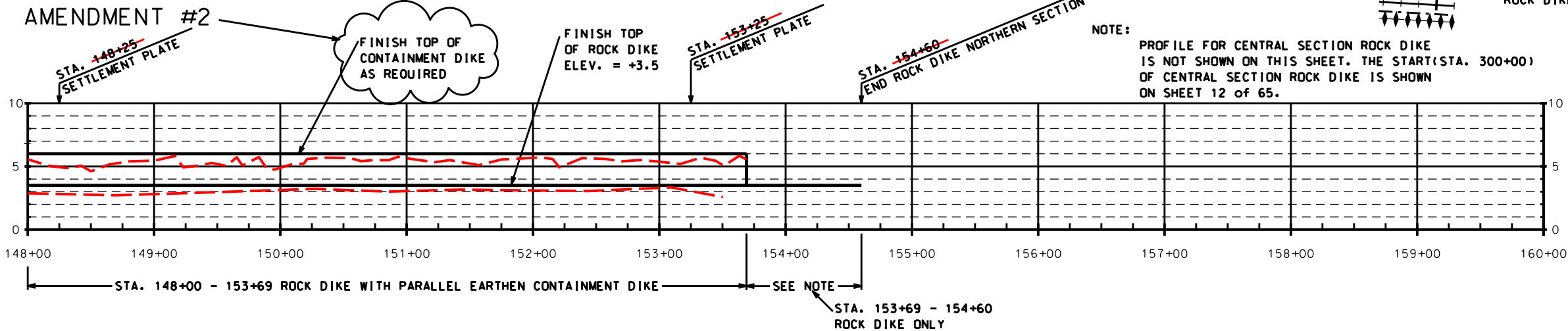
STA. 300+00 - POB  
BEGIN ROCK DIKE ONLY  
CENTRAL SEGMENT  
N=335220.66  
E=3486905.40



NOTE:

1. THE  $\phi$  OF THE ROCK DIKE SHALL BE LAID OUT ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM THE -1.0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.
4. THE HYDRAULIC CONNECTION CORRIDOR SHALL BE LOCATED AS CONCURRED IN BY THE COTR.

AMENDMENT #2



DATUM: ALL HORIZONTAL COORDINATES - NAD83  
ALL VERTICAL COORDINATES - NAVD88

PROFILE - NORTHERN SECTION  
STATION 148+00 - 154+60

NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.

NOTE:  
TEMPORARY WARNING SIGNS SHALL BE PLACED IN THE FIELD  
AS CONCURRED IN BY THE COTR. SPACING SHALL NOT EXCEED  
500'. SEE SHEET 45 OF 65 FOR WARNING SIGN DETAILS.

"AS-BUILT"

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.

Date	01/05
Designed	R. FAULKNER
Drawn	A.J.J. GREMILLON
Checked	B.A. STICKER
Approved	E.J.J. GIERING III

PLAN & PROFILE-ROCK DIKE- NORTHERN SEG.  
TE-46 - WEST LAKE BOUDREUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name	LA-346
Drawing Name	LA346010A2.dgn
Sheet	10A2 of 65



MATERIAL EXCAVATED TO CONSTRUCT THE FLOTATION ACCESS CHANNEL ON THE CENTRAL SECTION, FROM STA. 300+00 - STA.301+59 AND FROM STA. 320+76 - STA. 323+97 SHALL BE PLACED ON THE LAKE SIDE AND PULLED BACK INTO THE FLOTATION ACCESS CHANNEL PRIOR TO INSPECTION. ( SEE TYPICAL SECTION #4, SHEET 21 OF 65.)  
NOTE:

CHOKED DOWN SECTION  
(SEE SHEET 22 & 23 FOR DETAILS)

STA. 300+00  
BEGIN ROCK DIKE ONLY  
CENTRAL SECTION

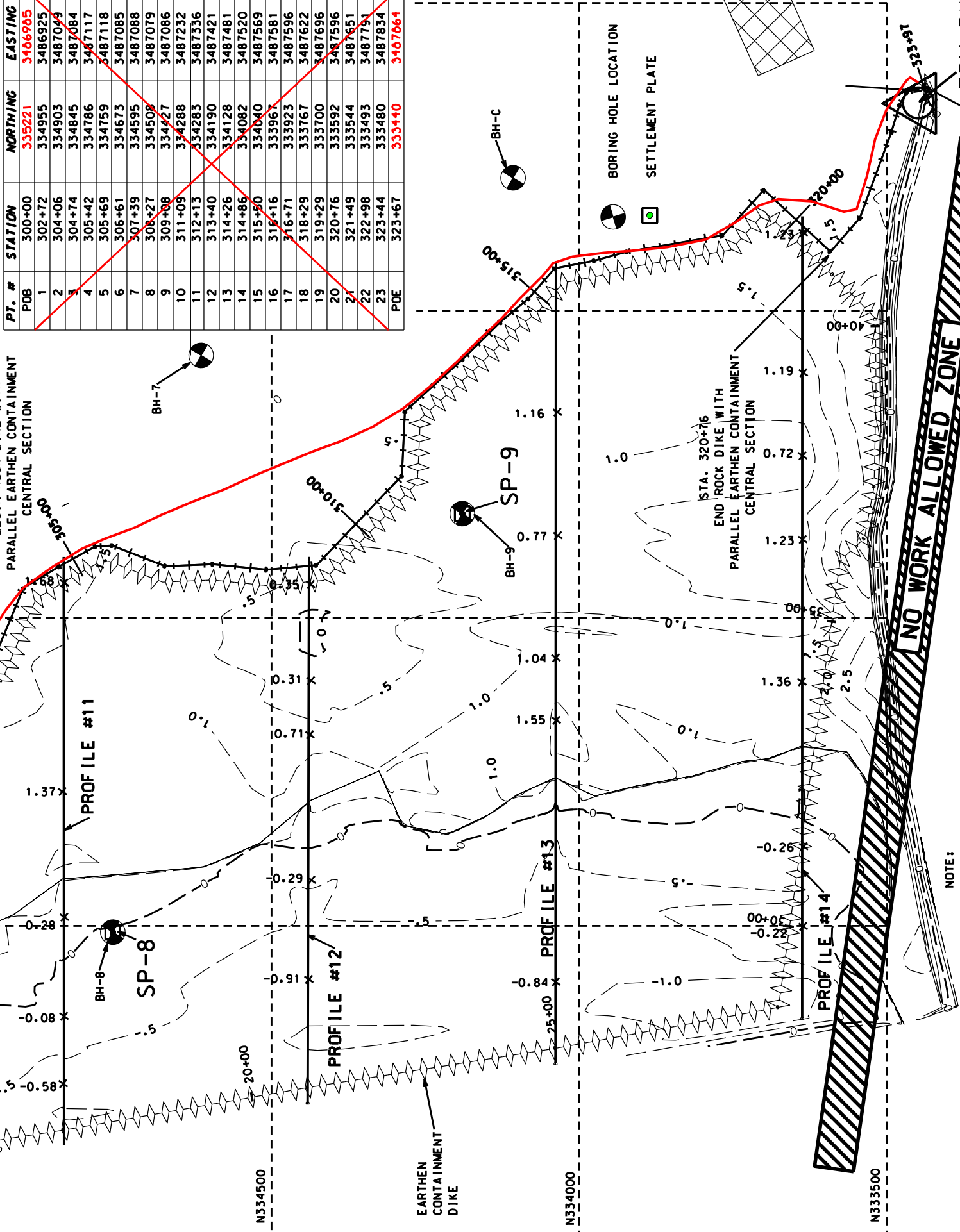
STA. 301+59  
BEGIN ROCK DIKE ONLY  
CENTRAL SECTION

STA. 302+00

PROFILE #10

ROCK DIKE-CENTRAL SECTION

PT. #	STATION	NORTHING	EASTING
POB	300+00	<del>335221</del>	<del>3406925</del>
1	302+72	<del>334955</del>	<del>3486925</del>
2	304+06	<del>334903</del>	<del>3487049</del>
3	304+74	<del>334845</del>	<del>3487084</del>
4	305+42	<del>334786</del>	<del>3487117</del>
5	305+69	<del>334759</del>	<del>3487118</del>
6	306+61	<del>334673</del>	<del>3487085</del>
7	307+39	<del>334595</del>	<del>3487088</del>
8	308+27	<del>334509</del>	<del>3487079</del>
9	309+08	<del>334427</del>	<del>3487086</del>
10	311+09	<del>334288</del>	<del>3487232</del>
11	312+13	<del>334283</del>	<del>3487336</del>
12	313+40	<del>334190</del>	<del>3487421</del>
13	314+26	<del>334128</del>	<del>3487481</del>
14	314+86	<del>334082</del>	<del>3487520</del>
15	315+50	<del>334040</del>	<del>3487569</del>
16	316+16	<del>333967</del>	<del>3487581</del>
17	316+71	<del>333923</del>	<del>3487596</del>
18	318+29	<del>333767</del>	<del>3487622</del>
19	319+29	<del>333700</del>	<del>3487696</del>
20	320+76	<del>333592</del>	<del>3487596</del>
21	321+49	<del>333544</del>	<del>3487451</del>
22	322+98	<del>333493</del>	<del>3487751</del>
23	323+44	<del>333480</del>	<del>3487834</del>
PDE	323+67	<del>333410</del>	<del>3407064</del>



1. THE C. OF THE ROCK DIKE SHALL BE LAID OUT ON THE 1:0 NAVD 88 CONTOUR. DEVIATION FROM THE 1:0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.
4. THE TOPO SHOWN IS FROM PRE-HURRICANE SURVEYS. THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.

**NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.**

**WEST LAKE BOUDREAUX - ROCK DIKE**  
**CENTRAL SECTION - PLAN VIEW**



# AS-BULLY

REVISIONS			
NO.	DATE	APPROVED	TITLE

File Name	LA-346
Drawing Name	LA346011.c
Sheet 11 of	



NRC  
Natural Resources Conservation Service  
United States Department of Agriculture

**PLAN VIEW-CENTRAL ROCK DIKE  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA**

	Date
Designed	01/05 R. FAULKNER
Drawn	01/05 A.J. CREMILLION
Checked	06/06 B.A. STICKER
Approved	12/06 E.J. GIERING III



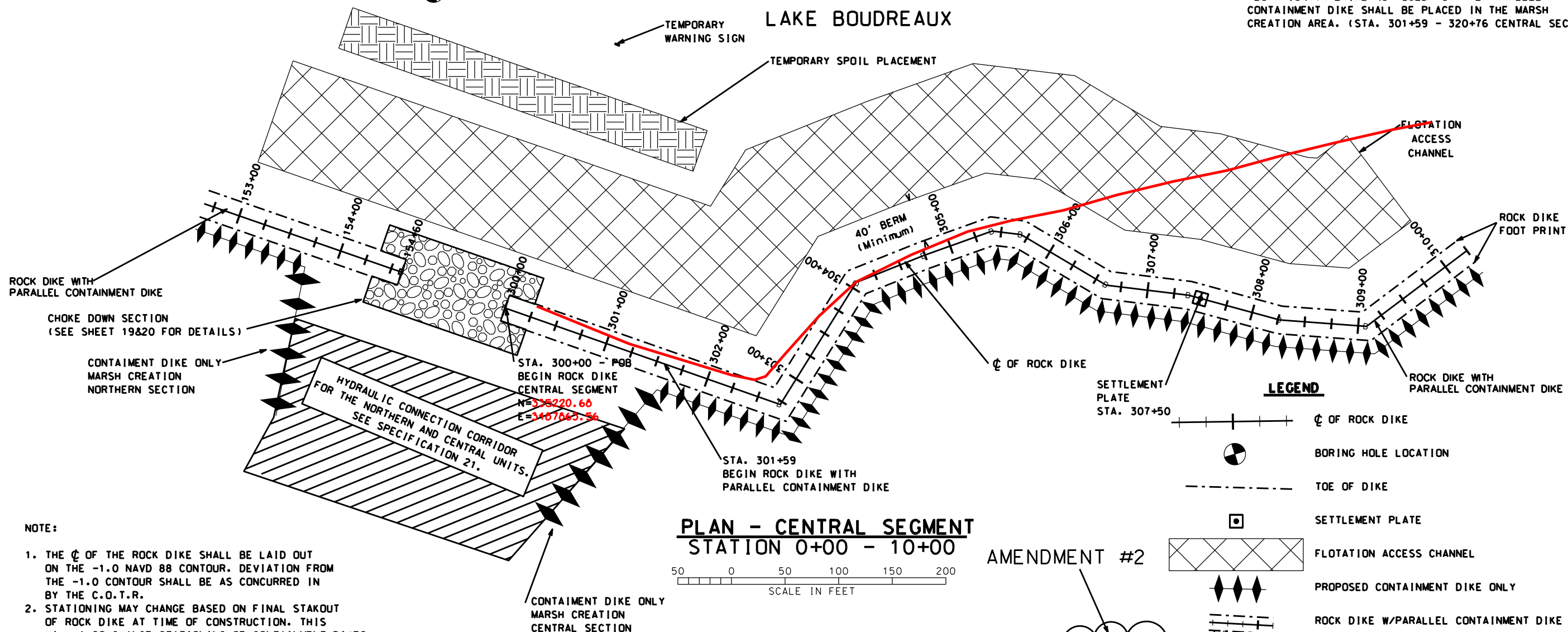
BORING HOLE B  
N=335336.33  
E=3487252.32

NOTE:  
MATERIAL EXCAVATED TO CONSTRUCT THE FLOTATION ACCESS CHANNEL  
FROM STA. 153+60 - STA.301+59 SHALL BE PLACED ON THE LAKE SIDE AND  
PULLED BACK INTO THE FLOTATION ACCESS CHANNEL PRIOR TO INSPECTION.  
SEE TYPICAL SECTION #4, ON SHEET 21 of 65.

BORING HOLE 7  
N=334614.32  
E=3487427.19

NOTE:

FLOTATION MATERIAL NOT USED FOR THE PARALLEL  
CONTAINMENT DIKE SHALL BE PLACED IN THE MARSH  
CREATION AREA. (STA. 301+59 - 320+76 CENTRAL SECTION)



NOTE:

1. THE  $\phi$  OF THE ROCK DIKE SHALL BE LAID OUT ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM THE -1.0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.

### PLAN - CENTRAL SEGMENT STATION 0+00 - 10+00

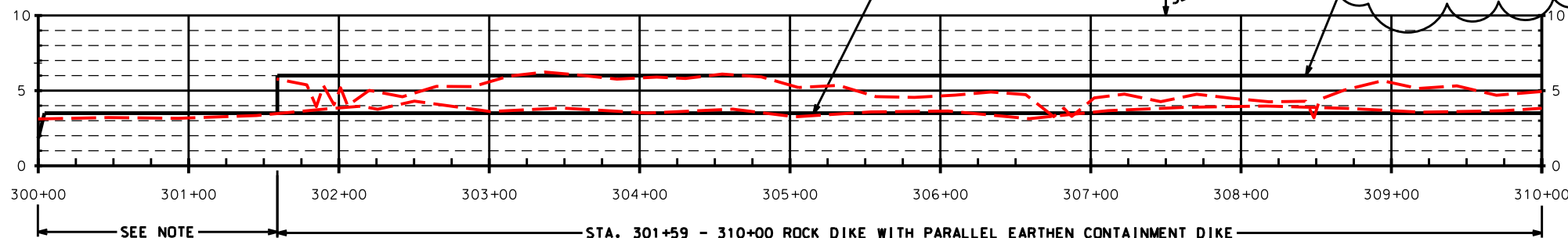
50 0 50 100 150 200  
SCALE IN FEET

AMENDMENT #2

FINISH TOP  
OF ROCK DIKE  
ELEV. = +3.5

STA. 307+50  
SETTLEMENT PLATE

FINISH TOP OF  
EARTHEN CONTAINMENT DIKE  
AS REQUIRED



### PROFILE - CENTRAL SECTION STATION 300+00 - 310+00

NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.

STA. 300+00 - 301+59  
ROCK DIKE ONLY

DATUM: ALL HORIZONTAL COORDINATES - NAD83  
ALL VERTICAL COORDINATES - NAVD88

"AS-BUILT"

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.

Date	01/05
Designed	R. FAULKNER
Drawn	A.J.J. GREMILLION
Checked	B.A. STICKER
Approved	E.J.J. GIERING III

PLAN & PROFILE-ROCK DIKE- CENTRAL SEC.  
TE-46 - WEST LAKE BOUDREUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name  
LA-346

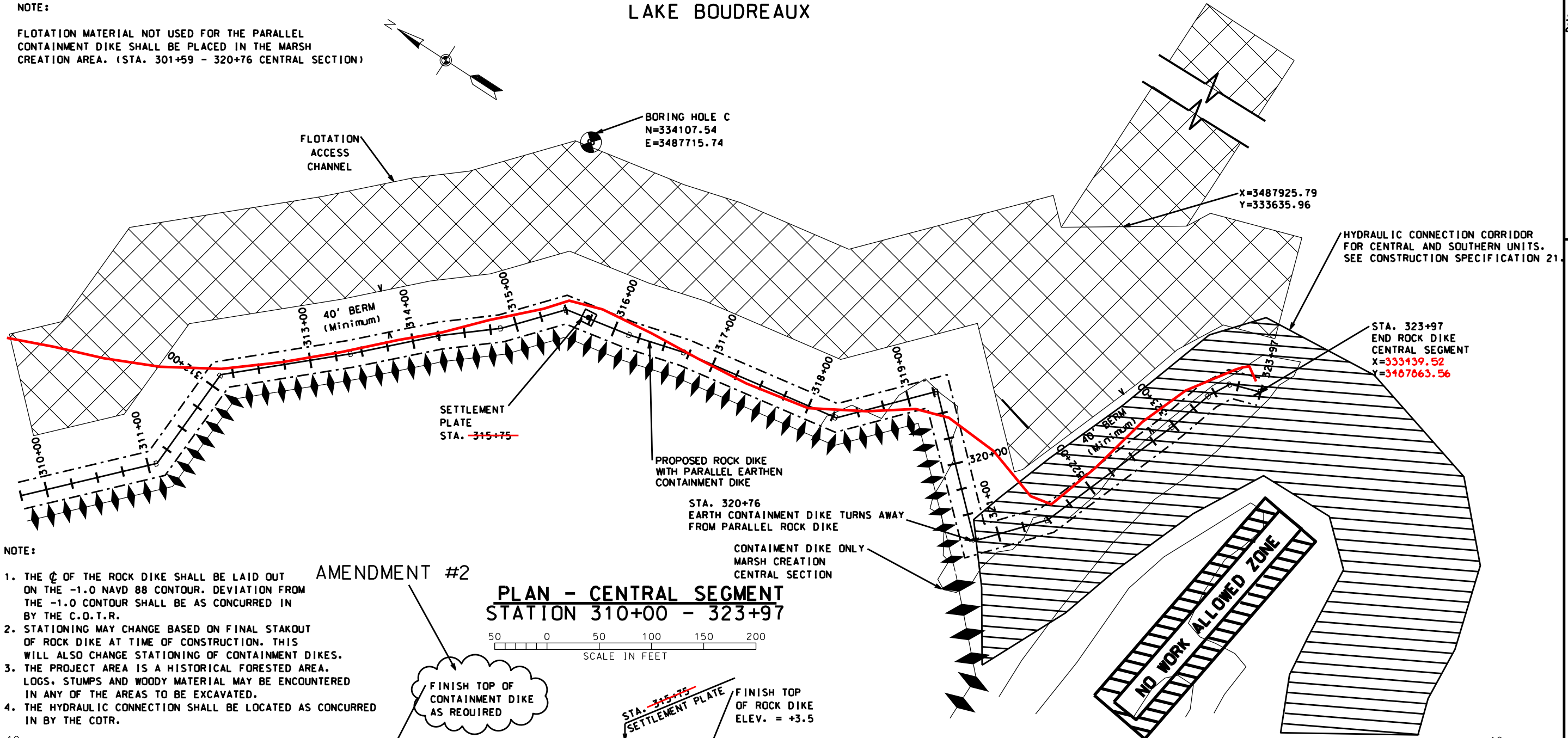
Drawing Name  
LA346012A2.dgn

Sheet 12A2 of 65

NOTE:

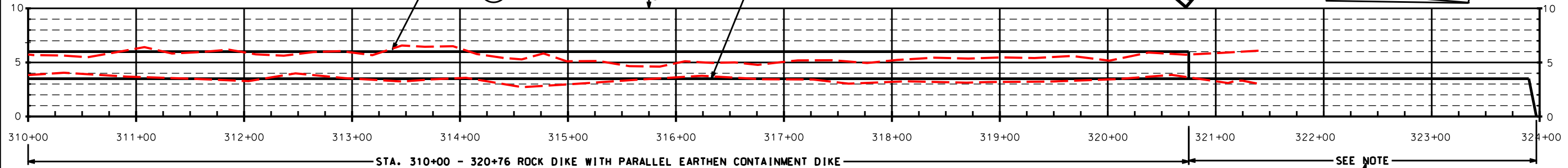
FLOTATION MATERIAL NOT USED FOR THE PARALLEL  
CONTAINMENT DIKE SHALL BE PLACED IN THE MARSH  
CREATION AREA. (STA. 301+59 - 320+76 CENTRAL SECTION)

LAKE BOUDREAUX



NOTE:

1. THE  $\phi$  OF THE ROCK DIKE SHALL BE LAID OUT  
ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM  
THE -1.0 CONTOUR SHALL BE AS CONCURRED IN  
BY THE C.O.T.R.
2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT  
OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS  
WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA.  
LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED  
IN ANY OF THE AREAS TO BE EXCAVATED.
4. THE HYDRAULIC CONNECTION SHALL BE LOCATED AS CONCURRED  
IN BY THE COTR.



PROFILE - CENTRAL SEGMENT  
STATION 310+00 - 323+97

NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.

DATUM: ALL HORIZONTAL COORDINATES - NAD83  
ALL VERTICAL COORDINATES - NAVD88

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.

Date	01/05
Designed	R. FAULKNER
Drawn	A.J.J. GREMILLION
Checked	B.A. STICKER
Approved	E.J.J. GIERING III

PLAN & PROFILE-ROCK DIKE- CENTRAL SEC.  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



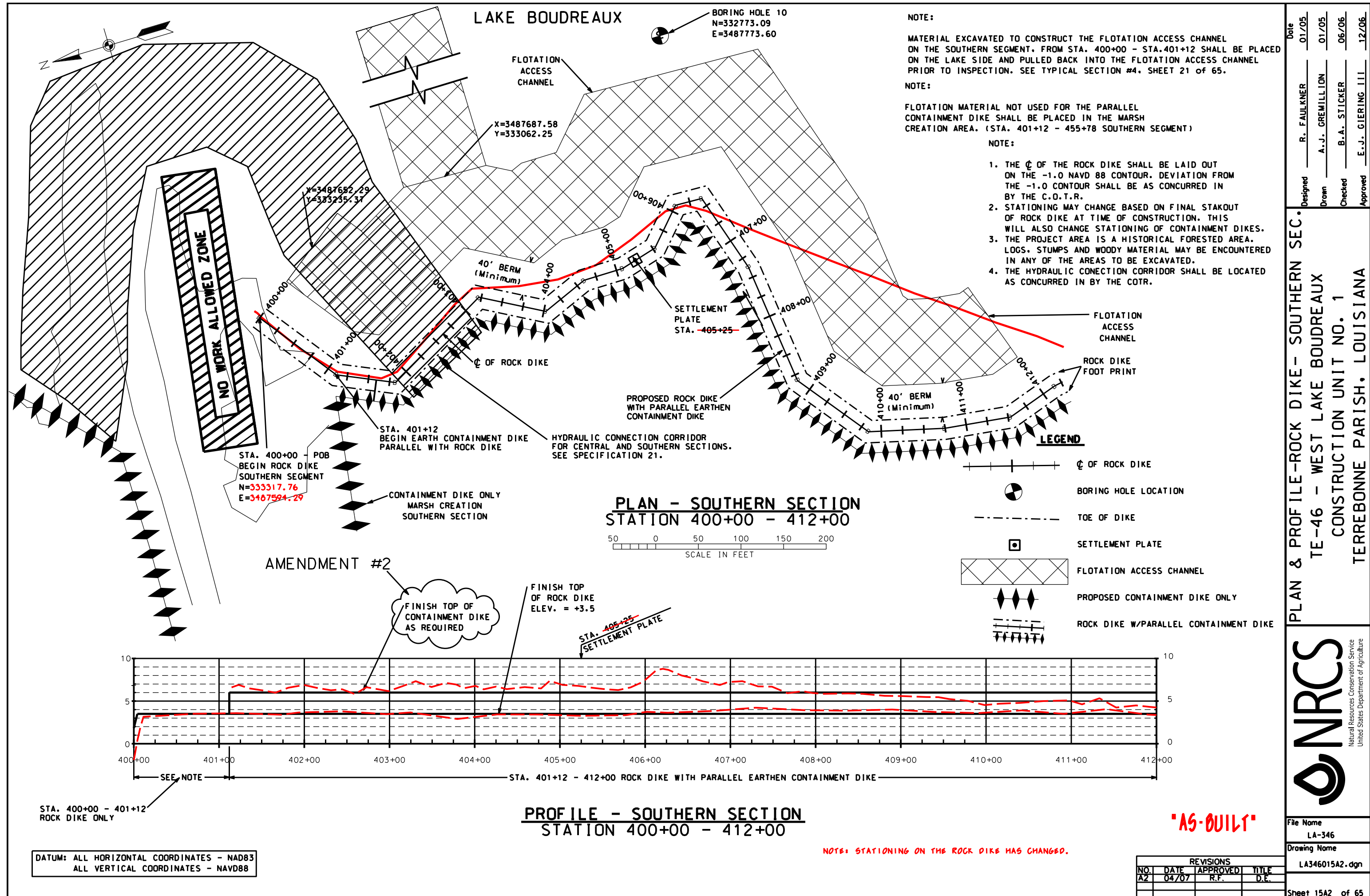
File Name  
LA-346

Drawing Name  
LA346013A2.dgn









Date	Designed	Drawn	Checked	Approved
01/05	R. FAULKNER	A.J. GREMILLION	B.A. STICKER	E.J. GIERING III
01/05				
06/06				
12/06				

**PLAN & PROFILE-ROCK DIKE- SOUTHERN SEC.**  
**TE-46 - WEST LAKE BOUDREAUX**  
**CONSTRUCTION UNIT NO. 1**  
**TERREBONNE PARISH, LOUISIANA**

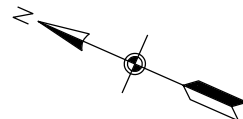
**NRCS**  
Natural Resources Conservation Service  
United States Department of Agriculture

**File Name**  
LA-346

**Drawing Name**  
LA346015A2.dgn

**Sheet 15A2 of 65**

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.



NOTE:  
FLOTATION MATERIAL NOT USED FOR THE PARALLEL  
CONTAINMENT DIKE SHALL BE PLACED IN THE MARSH  
CREATION AREA. (STA. 401+12 - 455+78 SOUTHERN SEGMENT)

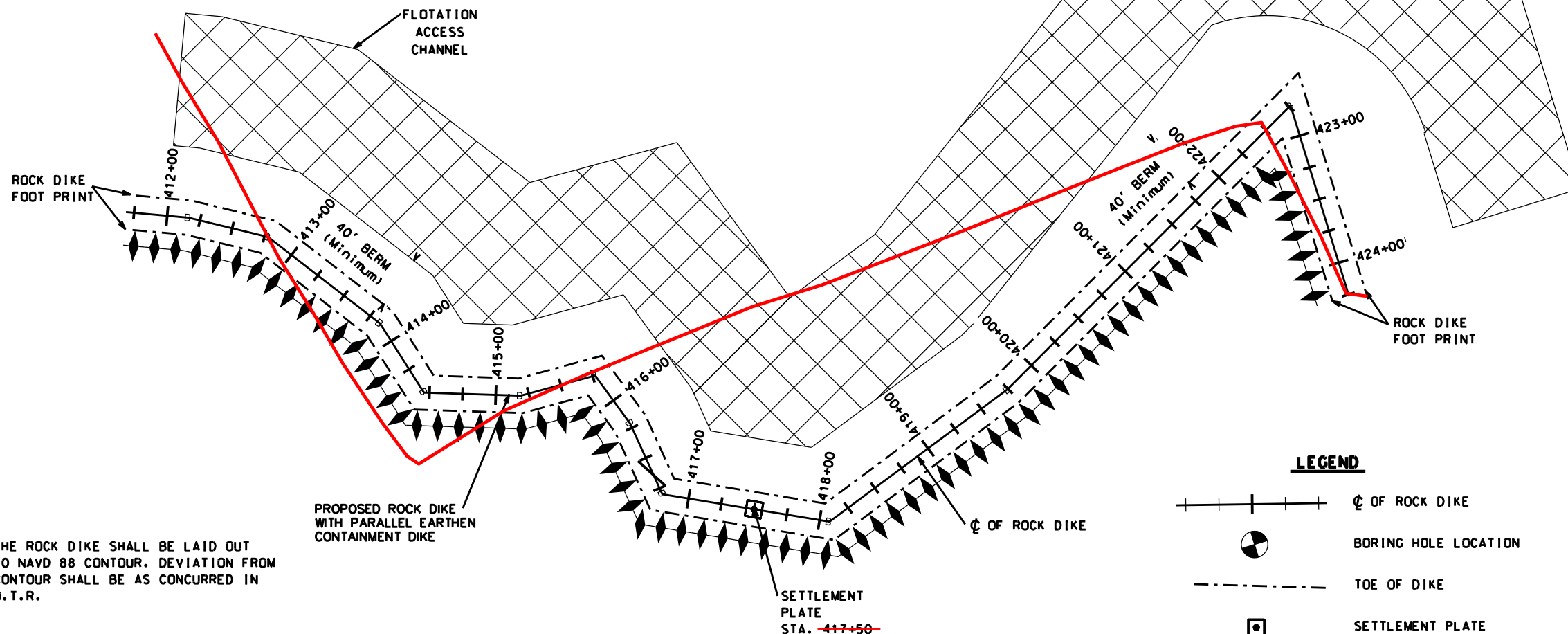
BORING HOLE D  
N=332140.16  
E=3487737.46

LAKE BOUDREUX

125 ° RADIUS

AMENDMENT #2

FLOTATION  
ACCESS  
CHANNEL



NOTE:  
THE  $\phi$  OF THE ROCK DIKE SHALL BE LAID OUT  
ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM  
THE -1.0 CONTOUR SHALL BE AS CONCURRED IN  
BY THE C.O.T.R.

AMENDMENT #2

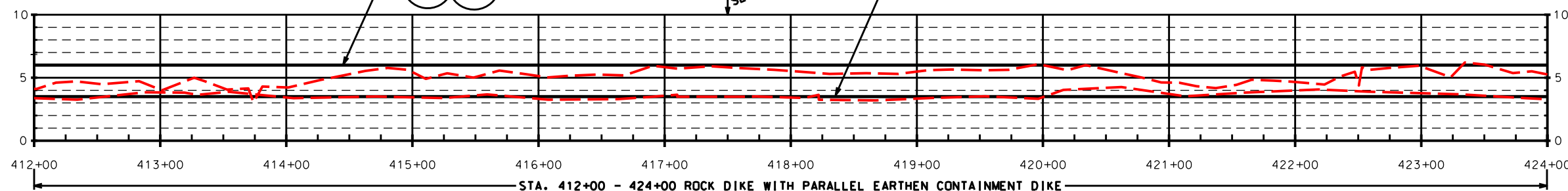
FINISH TOP OF  
CONTAINMENT DIKE  
AS REQUIRED

PLAN - SOUTHERN SECTION  
STATION 412+00 - 424+00

50 0 50 100 150 200  
SCALE IN FEET

STA. 417+50  
SETTLEMENT PLATE

FINISH TOP  
OF ROCK DIKE  
ELEV. = +3.5



DATUM: ALL HORIZONTAL COORDINATES - NAD83  
ALL VERTICAL COORDINATES - NAVD88

PROFILE - SOUTHERN SECTION  
STATION 412+00 - 424+00

NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.

"AS-BUILT"

Date	01/05
Designed	R. FAULKNER
Drawn	A.J.J. GREMILLON
Checked	B.A. STICKER
Approved	E.J.J. GIERING III

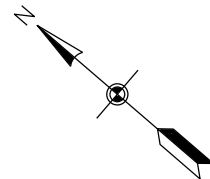
PLAN & PROFILE-ROCK DIKE- SOUTHERN SEC.  
TE-46 - WEST LAKE BOUDREUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name  
LA-346

Drawing Name  
LA346016A2.dgn

Sheet 16A2 of 65



NOTE:

FLOTATION MATERIAL NOT USED FOR THE PARALLEL  
CONTAINMENT DIKE SHALL BE PLACED IN THE MARSH  
CREATION AREA. (STA. 401+12 - 434+60 SOUTHERN SEGMENT)

MODIFICATION #2

BORING HOLE 12  
N=331281.84  
E=3488117.05

MODIFICATION #2

TEMPORARY WARNING SIGN

SPOIL PLACEMENT

FLOTATION  
ACCESS  
CHANNEL

ROCK DIKE  
FOOT PRINT

MODIFICATION #2

LEGEND

- ☯ OF ROCK DIKE
- BORING HOLE LOCATION
- TOE OF DIKE
- SETTLEMENT PLATE
- ▨ FLOTATION ACCESS CHANNEL
- ▴▴▴ PROPOSED CONTAINMENT DIKE ONLY
- ▴▴▴ ROCK DIKE W/PARALLEL CONTAINMENT DIKE

NOTE:

1. THE ☯ OF THE ROCK DIKE SHALL BE LAID OUT  
ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM  
THE -1.0 CONTOUR SHALL BE AS CONCURRED IN  
BY THE C.O.T.R.
2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT  
OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS  
WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA.  
LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED  
IN ANY OF THE AREAS TO BE EXCAVATED.

### PLAN - SOUTHERN SECTION STATION 424+00 - 436+00



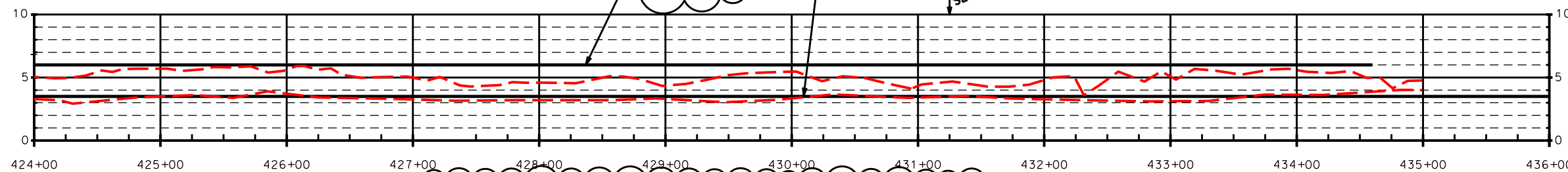
AMENDMENT #2

FINISH TOP OF  
CONTAINMENT DIKE  
AS REQUIRED

FINISH TOP  
OF ROCK DIKE  
ELEV. = +3.5

STA. 431+25  
SETTLEMENT PLATE

NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.



DATUM: ALL HORIZONTAL COORDINATES - NAD83  
ALL VERTICAL COORDINATES - NAVD88

### PROFILE - SOUTHERN SECTION STATION 424+00 - 436+00

MODIFICATION #2

"AS-BUILT"

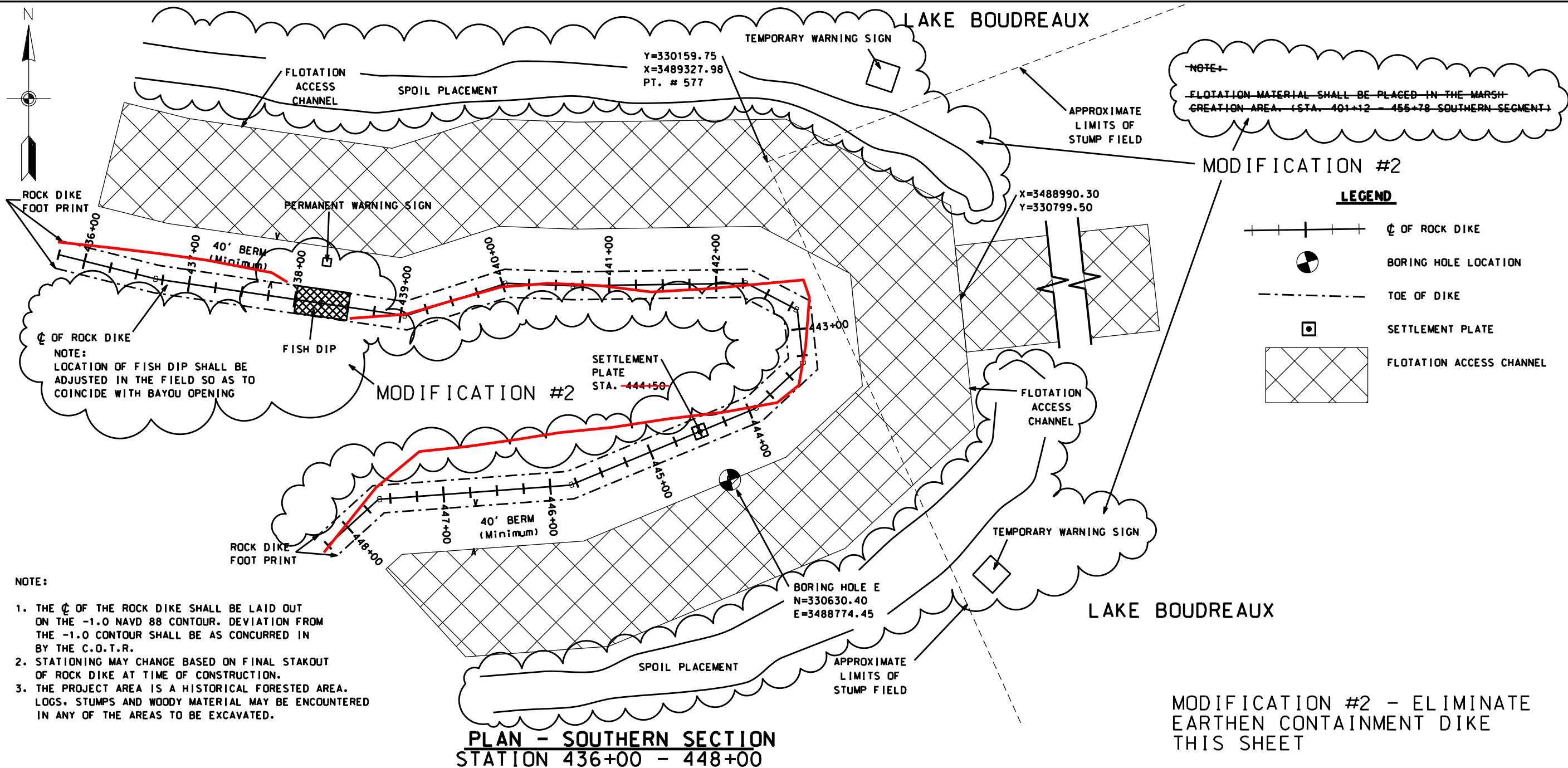
REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.
M2	07/07	R.F.	D.E.

Date	01/05
Designed	R. FAULKNER
Drawn	A.J.J. GREMILLION
Checked	B.A. STICKER
Approved	E.J.J. GIERING III

PLAN & PROFILE-ROCK DIKE- SOUTHERN SEG.  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

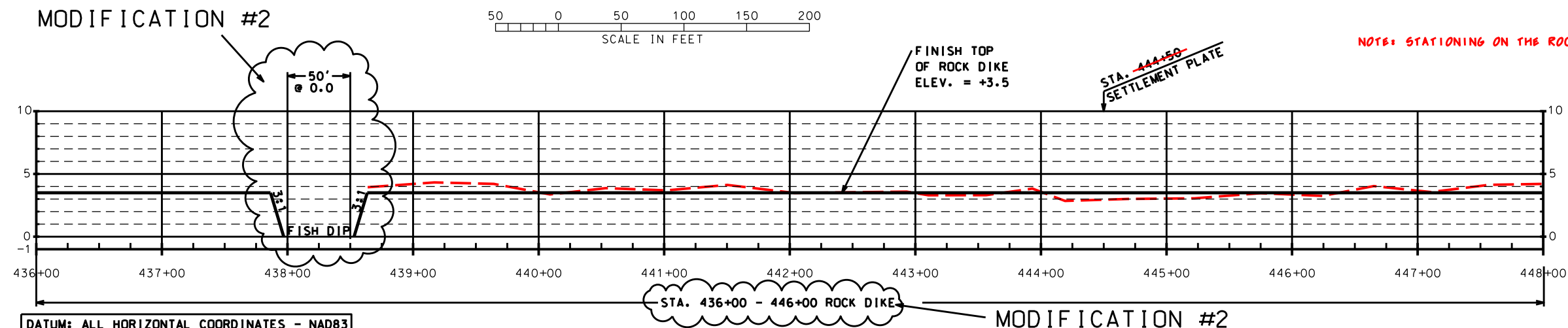


File Name	LA-346
Drawing Name	LA346017M2.dgn
Sheet	17M2 of 65



- NOTE:
1. THE  $\phi$  OF THE ROCK DIKE SHALL BE LAID OUT ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM THE -1.0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
  2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION.
  3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.

PLAN - SOUTHERN SECTION  
STATION 436+00 - 448+00



PROFILE - SOUTHERN SECTION  
STATION 436+00 - 448+00

MODIFICATION #2 - ELIMINATE  
EARTHEN CONTAINMENT DIKE  
THIS SHEET

NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.

"AS-BUILT"

DATUM: ALL HORIZONTAL COORDINATES - NAD83  
ALL VERTICAL COORDINATES - NAVD88

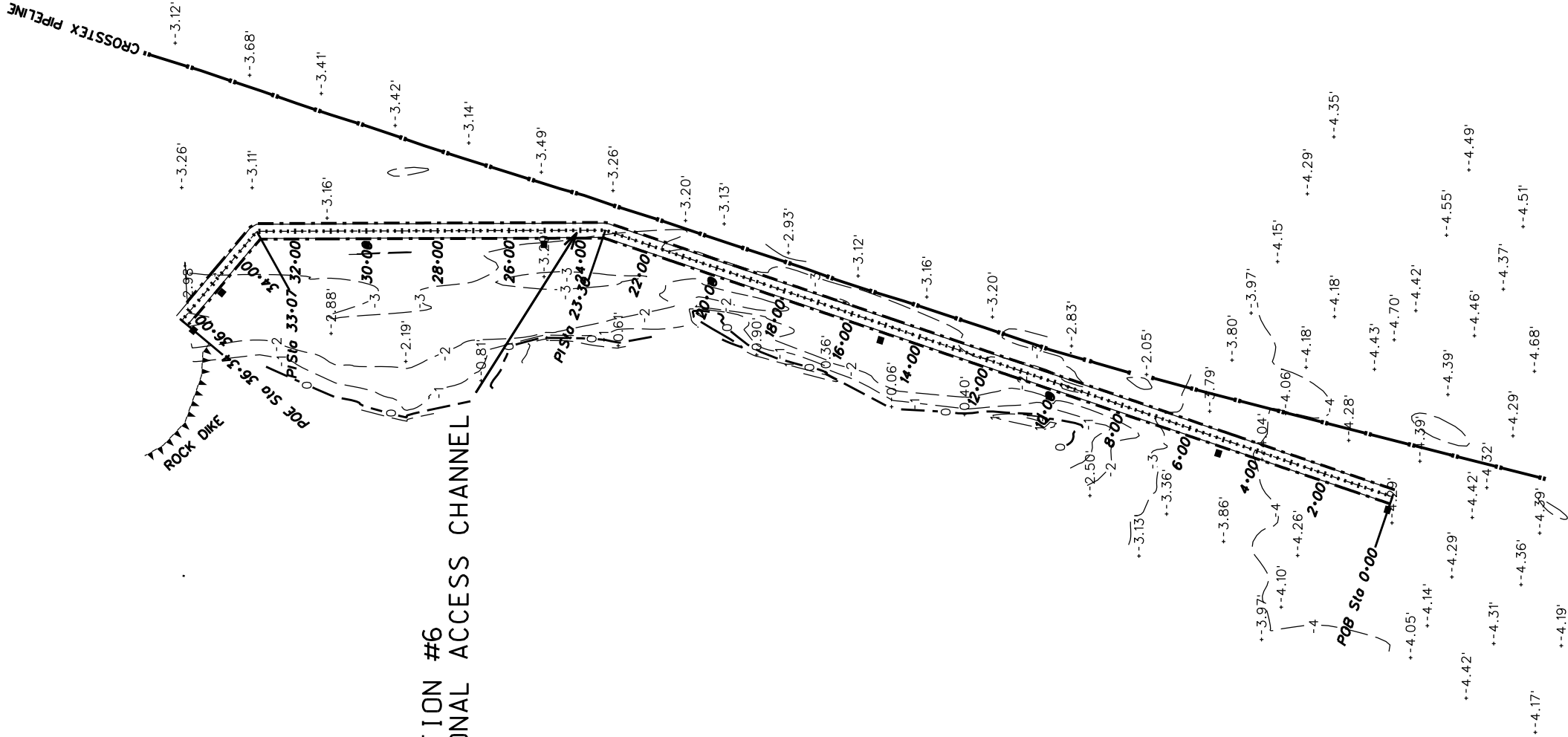
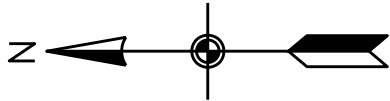
REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.
M2	07/07	R.F.	D.E.

Date	01/05
Designed	R. FAULKNER
Drawn	A.J. GREMILLON
Checked	B.A. STICKER
Approved	E.J. GIERING III

PLAN & PROFILE - ROCK DIKE - SOUTHERN SEC.  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name	LA-346
Drawing Name	LA346018M2.dgn
Sheet	18M2 of 65



ACCESS CHANNEL COORDINATES			
STA.	NORTHING	EASTING	
0+00	326301.36	3488181.43	
23+30	328508.09	3488928.94	
33+07	329485.64	3488925.89	
36+34	329695.45	3488675.81	

REVISIONS			
NO.	DATE	APPROVED	TITLE
M6	07/08	R.F.	D.F.


NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.

AS-BUILT

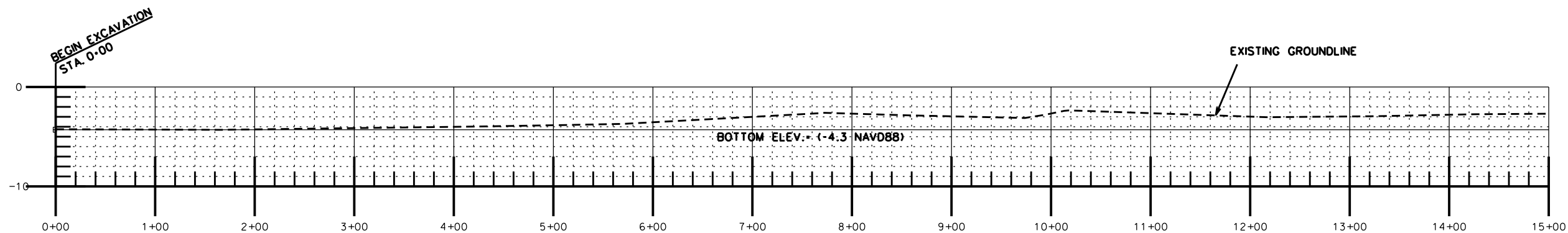
LEGEND

- TEMPORARY WARNING SIGN
- PROPOSED ACCESS CHANNEL

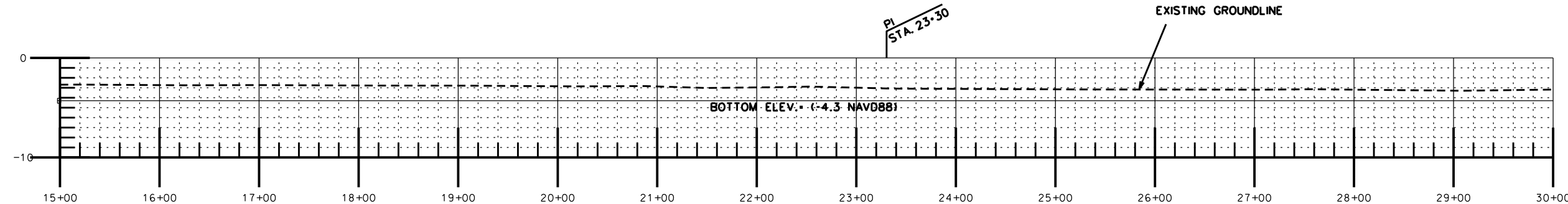


 Natural Resources Conservation Service United States Department of Agriculture	FILE NAME	ACCESS CHANNEL - SOUTHERN SECTION			DATE
	LA346	MODIFICATION #6 - PLAN MAP			07/2008
	DRAWING NAME	TE-46 - WEST LAKE BOUDREUX			07/2008
	LA346019AM6.DGN	CONSTRUCTION UNIT NO. 1			
SHEET 19AM6 OF 65		TERREBONNE PARISH, LOUISIANA		APPROVED	E.J. GIERING III

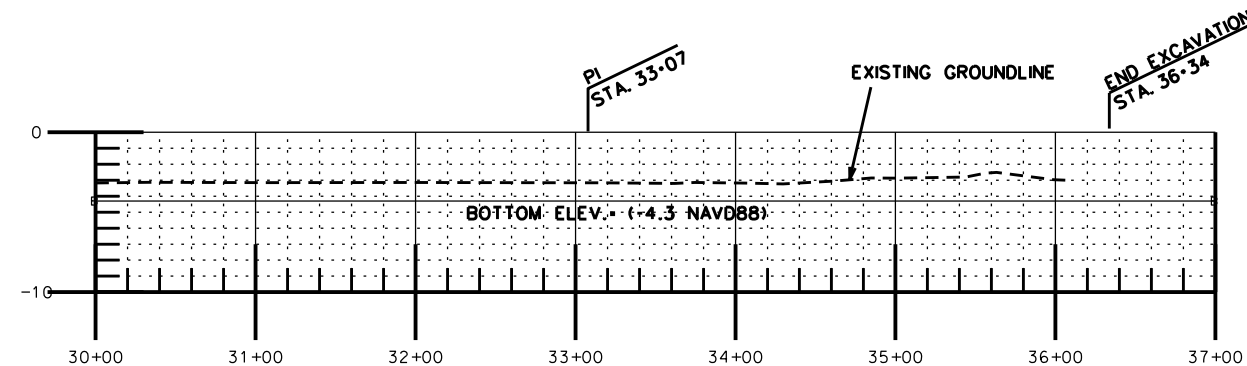




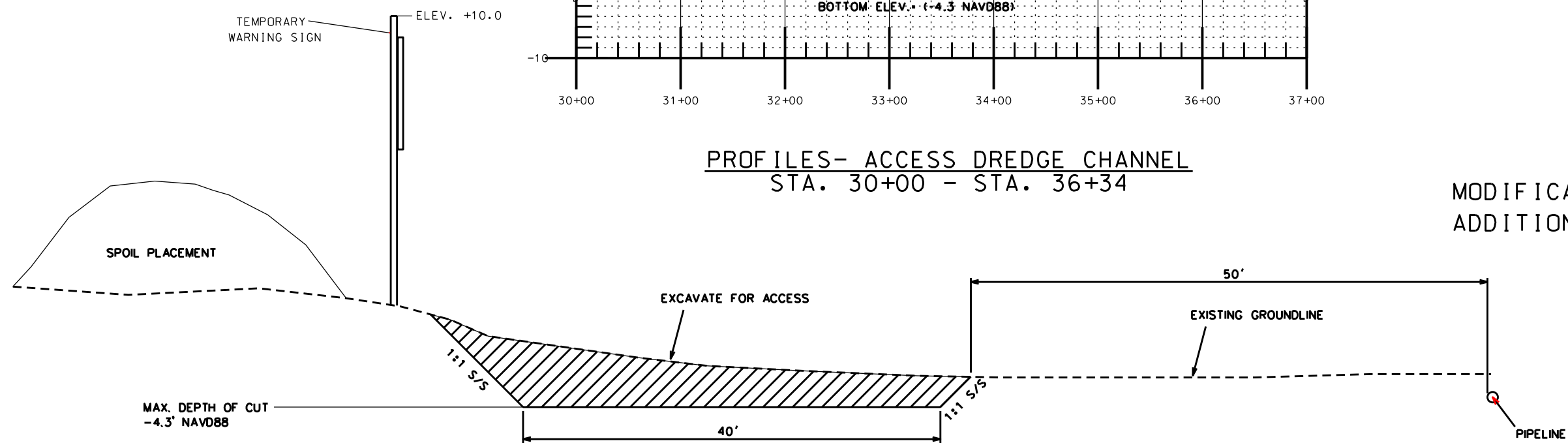
PROFILES- ACCESS DREDGE CHANNEL  
STA. 0+00 - STA. 15+00



PROFILES- ACCESS DREDGE CHANNEL  
STA. 15+00 - STA. 30+00



PROFILES- ACCESS DREDGE CHANNEL  
STA. 30+00 - STA. 36+34



TYPICAL SECTION  
ACCESS CHANNEL

MODIFICATION #6  
ADDITIONAL ACCESS CHANNEL

"AS-BUILT"

REVISIONS			
NO.	DATE	APPROVED	TITLE
M6	07/08	R.F.	D.E.

DESIGNED	R. FAULKNER	DATE	07/2008
DRAWN	D. WILMORE	DATE	07/2008
CHECKED			
APPROVED	E.J. GERING III		

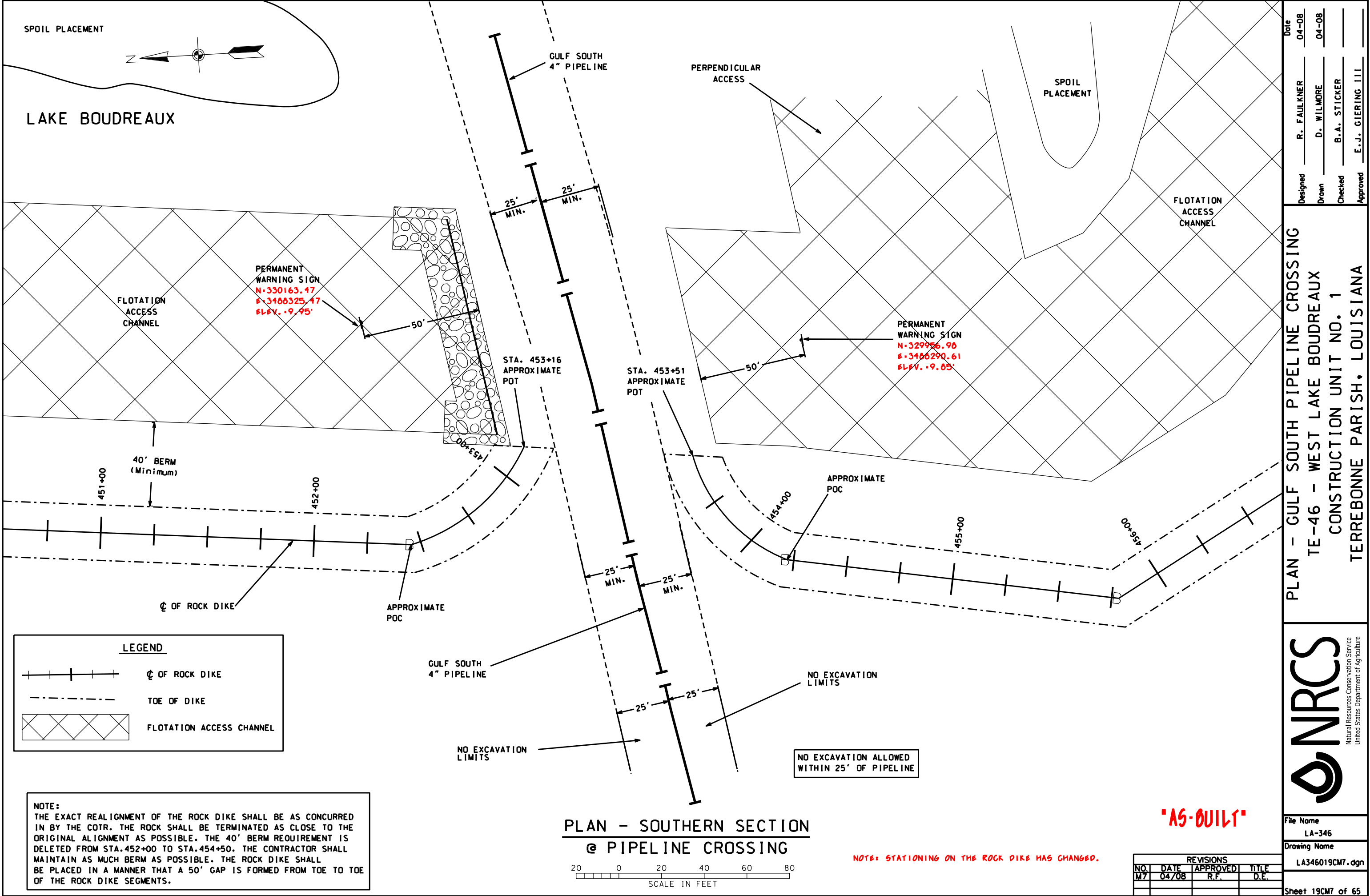
ACCESS DREDGE - SOUTHERN SECTION  
MODIFICATION #6-PROFILE & TYPICAL SECTION  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



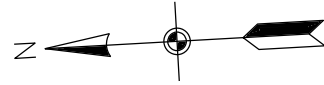
FILE NAME  
LA346

DRAWING NAME  
LA346019BM6.DGN

SHEET 198M6 OF 65



FLOTATION MATERIAL SHALL BE PLACED IN THE MARSH  
CREATION AREA. (STA. 401+12 - 455+78 SOUTHERN SECTION)



**NOTE:**

FLOTATION MATERIAL SHALL BE PLACED IN THE MARSH CREATION AREA. (STA. 401+12 - 455+78 SOUTHERN SECTION)

# LAKE BOUDREUX

**TEMPORARY WARNING SIGN**

**GULF SOUTH 4" PIPELINE**

**SPOIL PLACEMENT**

**FLOTATION ACCESS CHANNEL**

**PERMANENT WARNING SIGN**

**X=3488418.50  
Y=330127.48**

**X=3488408.83  
Y=330025.41**

**X=3488675.81  
Y=329695.45**

**ROCK DIKE FOOT PRINT**

**40' BERM (Minimum)**

**CL OF ROCK DIKE**

**SEE SHEET 41 FOR PIPELINE CROSSING DETAILS**

**NO EXCAVATION ALLOWED WITHIN 50' OF PIPELINE**

**MODIFICATION #7 - ELIMINATE THIS SECTION**

**PLAN - SOUTHERN SECTION  
STATION 448+00 - 460+09**

**SCALE IN FEET**

**NOTE:**

- THE CL OF THE ROCK DIKE SHALL BE LAID OUT ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM THE -1.0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
- STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
- THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.

**DETAIL-ACCESS CHANNEL ARMOR (NOT TO SCALE)**

SEE SHEET 41 FOR ADDITIONAL PIPELINE CROSSING DETAILS

**LEGEND**

- CL OF ROCK DIKE
- BORING HOLE LOCATION
- TOE OF DIKE
- SETTLEMENT PLATE
- FLOTATION ACCESS CHANNEL

**STA. 460+09 - POE  
END ROCK DIKE  
SOUTHERN SEGMENT  
N=330168.575  
E=3488220.053**

Date	Designed	Drawn	Checked	Approved
01/05	R. FAULKNER	A.J. GREMILLION	B.A. STICKER	E.J. GIERING III
01/05				
06/06				
12/06				

**AN & PROFILE-ROCK DIKE - SOUTHERN SEG.  
TE-46 - WEST LAKE BOUDREUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA**

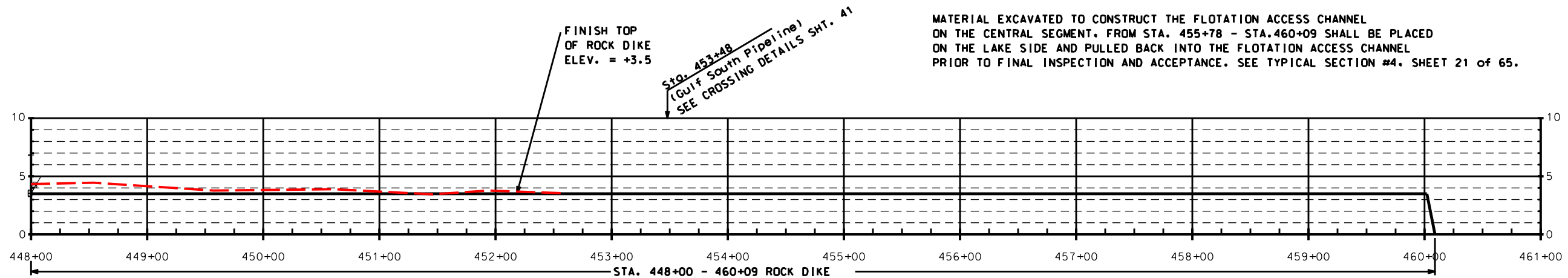
1. THE C OF THE ROCK DIKE SHALL BE LAID OUT ON THE -1.0 NAVD 88 CONTOUR. DEVIATION FROM THE -1.0 CONTOUR SHALL BE AS CONCURRED IN BY THE C.O.T.R.
2. STATIONING MAY CHANGE BASED ON FINAL STAKOUT OF ROCK DIKE AT TIME OF CONSTRUCTION. THIS WILL ALSO CHANGE STATIONING OF CONTAINMENT DIKES.
3. THE PROJECT AREA IS A HISTORICAL FORESTED AREA. LOGS, STUMPS AND WOODY MATERIAL MAY BE ENCOUNTERED IN ANY OF THE AREAS TO BE EXCAVATED.

**SEE SHEET 41 FOR PIPELINE  
CROSSING DETAILS**

PLAN - SOUTHERN SECTION  
STATION 448+00 - 460+09



MATERIAL EXCAVATED TO CONSTRUCT THE FLOTATION ACCESS CHANNEL ON THE CENTRAL SEGMENT, FROM STA. 455+78 - STA. 460+09 SHALL BE PLACED ON THE LAKE SIDE AND PULLED BACK INTO THE FLOTATION ACCESS CHANNEL PRIOR TO FINAL INSPECTION AND ACCEPTANCE. SEE TYPICAL SECTION #4, SHEET 21 OF 65.



DATUM: ALL HORIZONTAL COORDINATES - NAD83  
ALL VERTICAL COORDINATES - NAVD88

PROFILE - SOUTHERN SECTION  
STATION 448+00 - 460+09

**NOTE: STATIONING ON THE ROCK DIKE HAS CHANGED.**

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.
M2	07/07	R.F.	D.E.
M7	04/08	R.F.	D.E.

PLAN & PROFILE-ROCK DIKE- SOUTHERN SEG.  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



**NRCS**  
 Natural Resources Conservation Service  
 United States Department of Agriculture

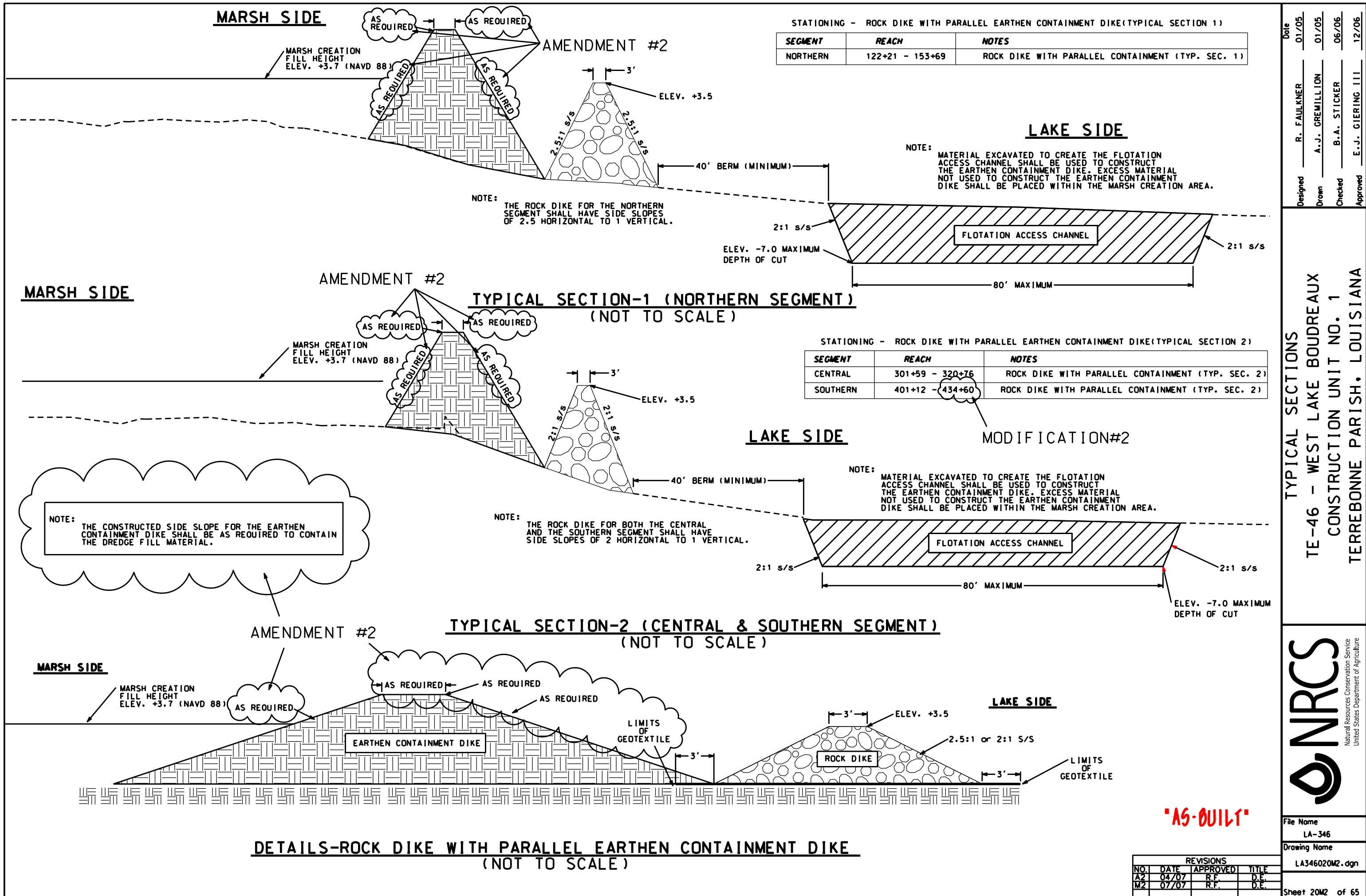
File Name  
LA-346

Drawing Name
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LA346019M7.dgn

Sheet 19M7 of 65





Date

01/05

Designed

R. FAULKNER

Drawn

A.J. GREMILLION

Checked

B.A. STICKER

Approved

E.J. GIERING III

TYPICAL SECTIONS

TE-46 - WEST LAKE BOUDREUX

CONSTRUCTION UNIT NO. 1

TERREBONNE PARISH, LOUISIANA

NRCS

Natural Resources Conservation Service

United States Department of Agriculture

File Name

LA-346

Drawing Name

LA346020M2.dgn

Sheet 20M2 of 65

REVISIONS

NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.
M2	07/07	R.F.	D.E.

MARSH SIDE

AMENDMENT #2

AMENDMENT #2

MARSH CREATION SIDE

MARSH CREATION  
FILL HEIGHT  
ELEV. +3.7 (NAVD 88)

STATIONING - EARTHEN CONTAINMENT DIKE ONLY (TYPICAL SECTION 3)

CREATION AREA	REACH	NOTES
NORTHERN AREA	0+00 - 79+75	EARTHEN CONTAINMENT ONLY (TYP. SECTION 3)
CENTRAL AREA	0+00 - 37+83	EARTHEN CONTAINMENT ONLY (TYP. SECTION 3)
SOUTHERN AREA	0+00 - 59+56	EARTHEN CONTAINMENT ONLY (TYP. SECTION 3)

MODIFICATION #2

BORROW CANAL TO BACK FILLED  
WITH DREDGE MATERIAL.

BORROW CANAL

1:1 S/S

1:1 S/S

6' MAXIMUM

VARIABLE

TYPICAL SECTION-3 (NORTHERN, CENTRAL & SOUTHERN AREAS) EARTHEN CONTAINMENT ONLY  
(NOT TO SCALE)

MARSH SIDE

2.5:1 or 2:1 S/S  
(SEE NOTE BELOW)

ELEV. +3.5

2.5:1 or 2:1 S/S  
(SEE NOTE BELOW)

40' BERM (MINIMUM)

LIMITS OF GEOTEXTILE  
(3' BEYOND TOE OF ROCK)

NOTE:

THE ROCK DIKE FOR THE NORTHERN  
SEGMENT SHALL HAVE SIDE SLOPES  
OF 2.5 HORIZONTAL TO 1 VERTICAL.  
THE ROCK DIKE FOR THE CENTRAL AND  
THE SOUTHERN SEGMENT SHALL HAVE  
SIDE SLOPES OF 2 HORIZONTAL TO  
1 VERTICAL.

NOTE:  
THE CONSTRUCTED SIDE SLOPE FOR THE EARTHEN  
CONTAINMENT DIKE SHALL BE AS REQUIRED TO CONTAIN  
THE DREDGE FILL MATERIAL.

AMENDMENT #2

AS REQUIRED

EARTHEN CONTAINMENT DIKE

AS REQUIRED

AS REQUIRED

AMENDMENT #2

LAKE SIDE

NOTE:

MATERIAL EXCAVATED TO CONSTRUCT THE FLOTATION ACCESS CHANNEL  
SHALL BE PLACED ON THE LAKE SIDE AND PULLED BACK INTO THE  
FLOTATION ACCESS CHANNEL PRIOR TO INSPECTION.

FLOTATION ACCESS CHANNEL

2:1 s/s

2:1 s/s

ELEV. -5.0 MAXIMUM  
DEPTH OF CUT

80' MAXIMUM

TEMPORARY  
SPOIL  
DISPOSAL  
AREA

TEMPORARY  
WARNING SIGN

TYPICAL SECTION-4 (ROCK ONLY)  
(NOT TO SCALE)

STATIONING - ROCK DIKE ONLY (TYPICAL SECTION 4)

SEGMENT	REACH	NOTES
NORTHERN	100+00 - 122+21	ROCK DIKE ONLY (TYPICAL SECTION 4)
NORTHERN	153+69 - 154+60	ROCK DIKE ONLY (TYPICAL SECTION 4)
CENTRAL	300+00 - 301+59	ROCK DIKE ONLY (TYPICAL SECTION 4)
CENTRAL	320+76 - 323+97	ROCK DIKE ONLY (TYPICAL SECTION 4)
SOUTHERN	400+00 - 401+12	ROCK DIKE ONLY (TYPICAL SECTION 4)
SOUTHERN	455+78 - 460+09	ROCK DIKE ONLY (TYPICAL SECTION 4)

DETAILS-EARTHEN CONTAINMENT DIKE ONLY  
(NOT TO SCALE)

"AS-BUILT"

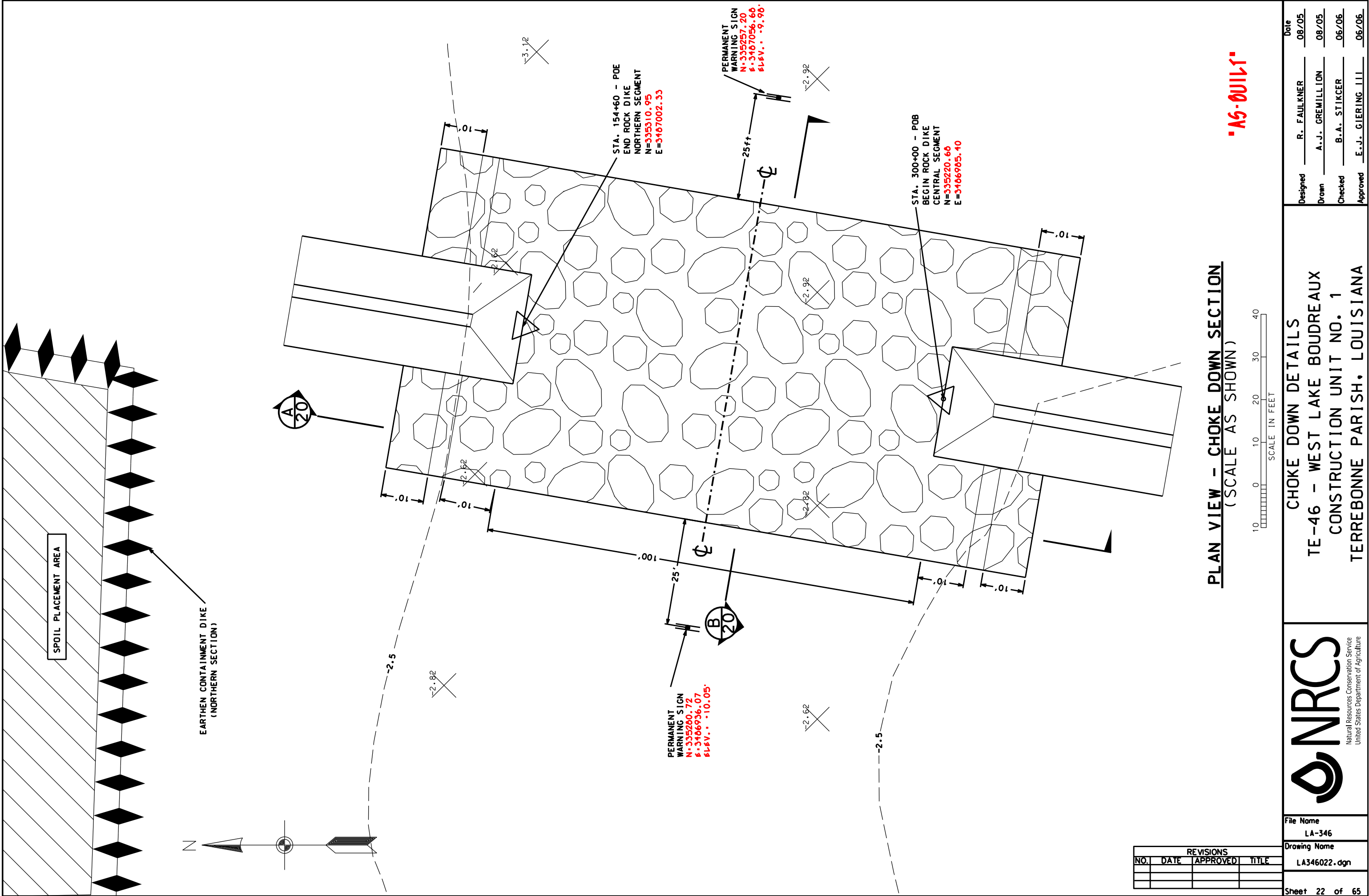
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NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.
M2	07/07	R.F.	D.E.

Date	01/05
Designed	R. FAULKNER
Drawn	A.J. GREMILLON
Checked	B.A. STICKER
Approved	E.J. GIERING III


TYPICAL SECTIONS  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

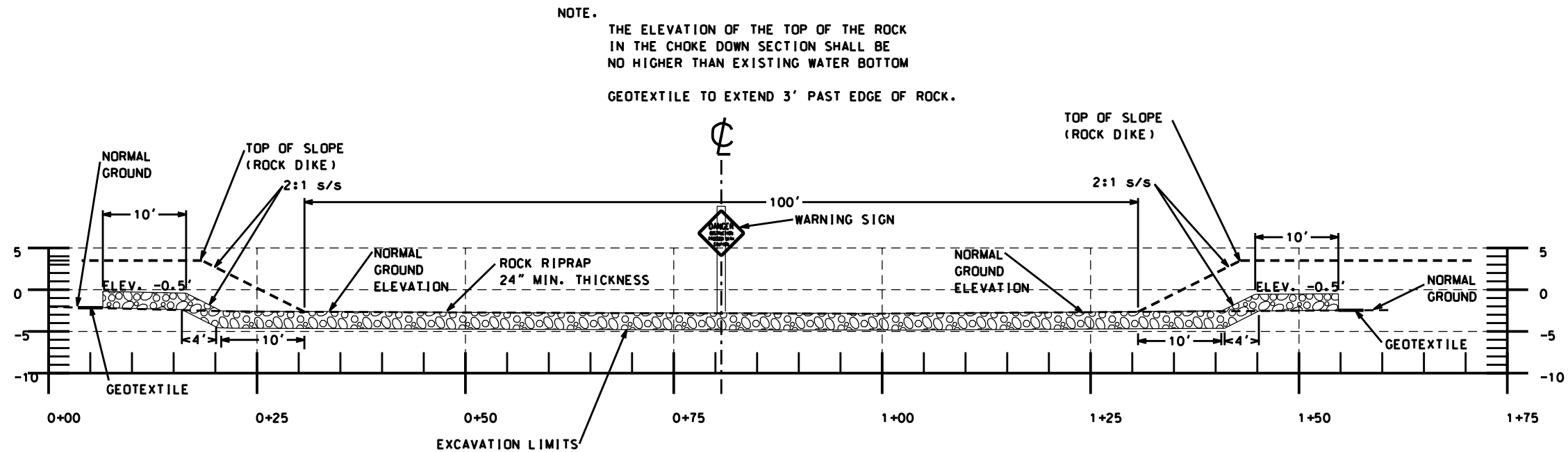


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Drawing Name	LA346021M2.dgn
Sheet	21M2 of 65

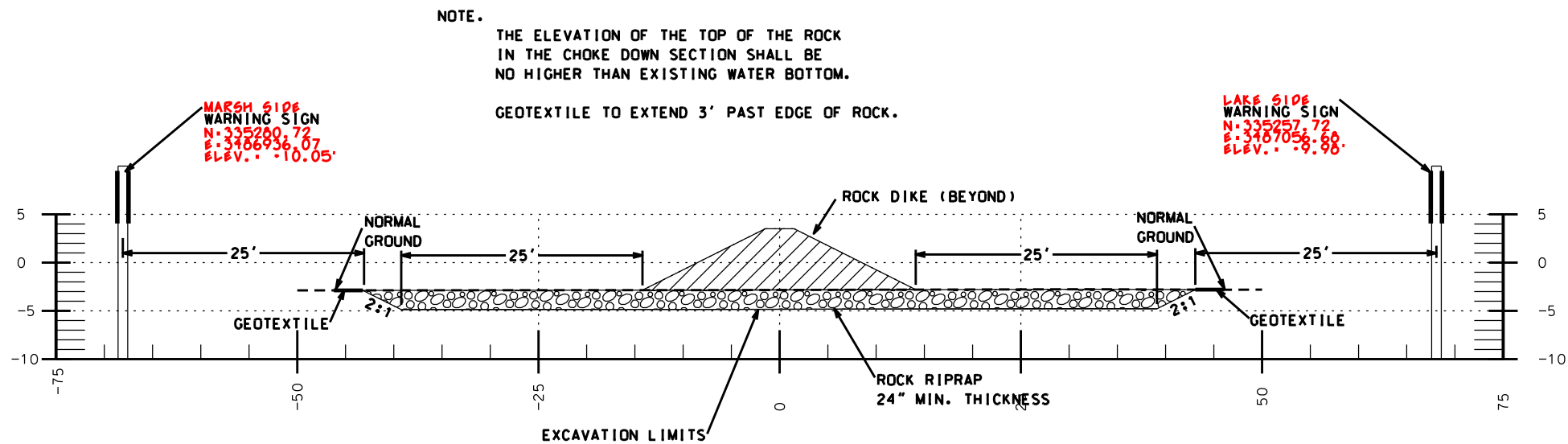


REVISIONS			
NO.	DATE	APPROVED	TITLE

 Natural Resources Conservation Service United States Department of Agriculture	File Name LA-346		Drawing Name LA346022.dgn		Sheet 22 of 65	
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	Designed R. FAULKNER					Date 08/05
	Drawn A.J.J. GREMILLION					Date 08/05
Checked B.A. STICKER					Date 06/06	
Approved E.J. GIERING III					Date 06/06	



**CHOKE DOWN SECTION A**  
(SCALE AS SHOWN) 19



**CHOKE DOWN SECTION B**  
(SCALE AS SHOWN) 19

**"AS-BUILT"**

REVISIONS			
NO.	DATE	APPROVED	TITLE

Date	Designed	Drawn	Checked	Approved
08/05	R. FAULKNER	A.J. GREMILLON	B.A. STICKER	E.J. GIERING III
08/05				
06/06				
12/06				

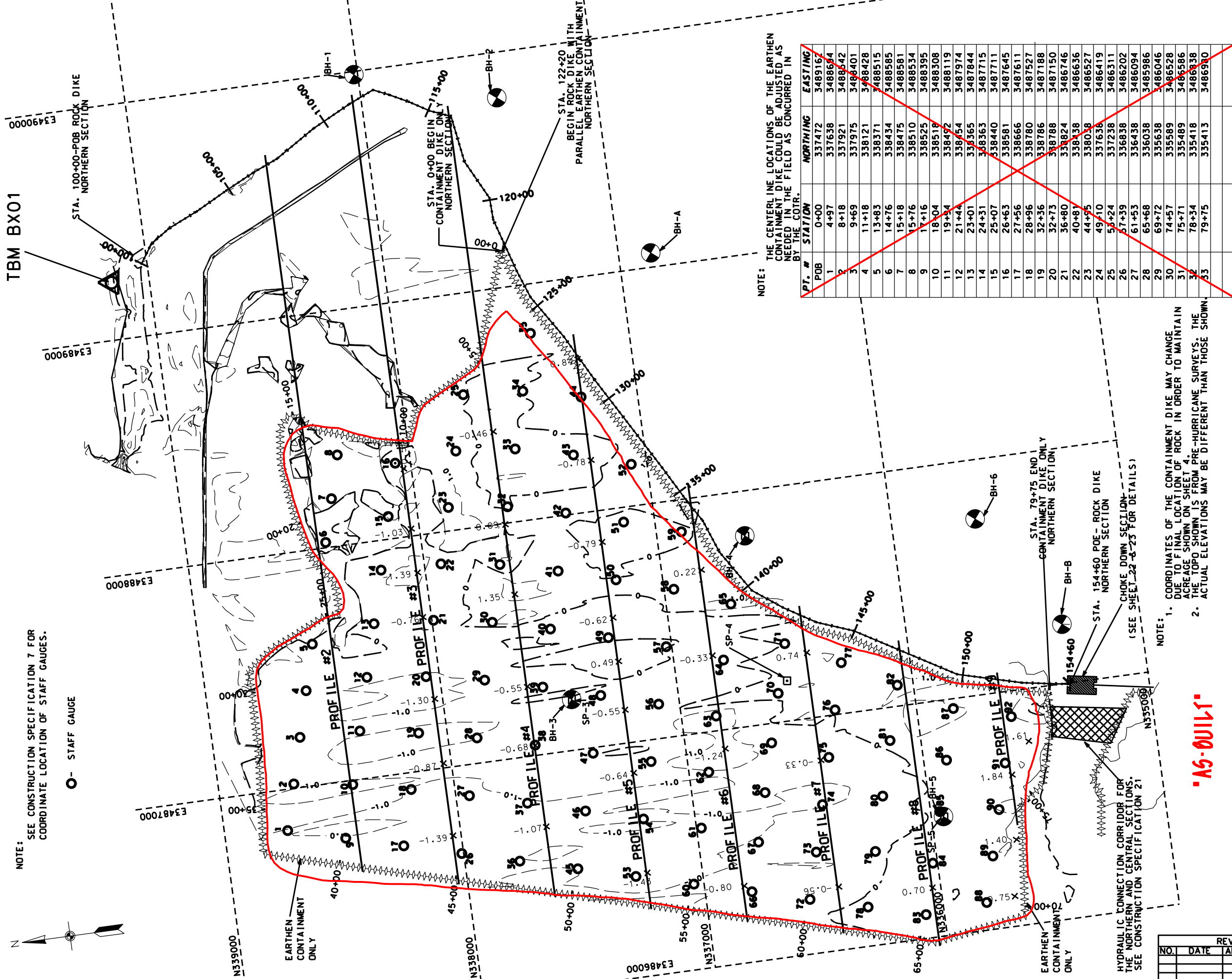
**CHOKE DOWN DETAILS**  
**TE-46 - WEST LAKE BOUDREAUX**  
**CONSTRUCTION UNIT NO. 1**  
**TERREBONNE PARISH, LOUISIANA**



File Name	LA-346
Drawing Name	LA346023.dgn
Sheet	23 of 65



MARSH CREATION AREA  
NORTHERN SECTION = 127 ACRES



NOTE: SEE CONSTRUCTION SPECIFICATION 7 FOR COORDINATE LOCATION OF STAFF GAUGES.

○- STAFF GAUGE

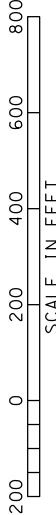
NOTE: THE CENTERLINE LOCATIONS OF THE EARTHEN CONTAINMENT DIKE COULD BE ADJUSTED AS NEEDED IN THE FIELD AS CONCURRED BY THE COTR.

PT. #	STATION	NORTHING	EASTING
POB	0+00	337472	348916
1	4+97	337638	348864
2	8+18	337921	348842
3	9+69	337975	348401
4	11+18	338121	3488428
5	13+83	338371	3488515
6	14+76	338434	3488585
7	15+18	338475	3488581
8	15+76	338510	3488534
9	17+16	338525	3488395
10	18+04	338518	3488308
11	19+54	338492	3488119
12	21+44	338754	3487974
13	23+01	338365	3487844
14	24+31	338363	3487715
15	25+07	338440	3487711
16	26+63	338581	3487645
17	27+56	338666	3487611
18	28+96	338780	3487527
19	32+36	338786	3487188
20	32+73	338788	3487150
21	36+80	338824	3486746
22	40+81	338438	3486636
23	44+95	338038	3486527
24	49+10	337638	3486419
25	53+24	337238	3486311
26	57+39	336838	3486202
27	61+53	336438	3486094
28	65+68	336038	3485986
29	69+72	335638	3486046
30	74+57	335589	3486528
31	75+71	335489	3486586
32	78+34	335418	3486338
33	79+75	335413	3486930

NOTE: 1. COORDINATES OF THE CONTAINMENT DIKE MAY CHANGE DUE TO FINAL LOCATION OF ROCK IN ORDER TO MAINTAIN ACREAGE SHOWN ON SHEET 4. 2. THE TOPO SHOWN IS FROM PRE-HURRICANE SURVEYS. THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.

NOTE:

WEST LAKE BOUDREUX - MARSH CREATION  
NORTHERN SECTION - PLAN VIEW



THERE ARE NO CENTERLINE LOCATIONS OF THE EARTHEN CONTAINMENT FROM STA. 79+75 TO STA. 111+28. THIS REACH OF THE CONTAINMENT DIKE PARALLELS THE ROCK DIKE. THE ALIGNMENT OF THE ROCK DIKE WILL BE DETERMINED AT THE TIME OF CONSTRUCTION.

"A5-0011"

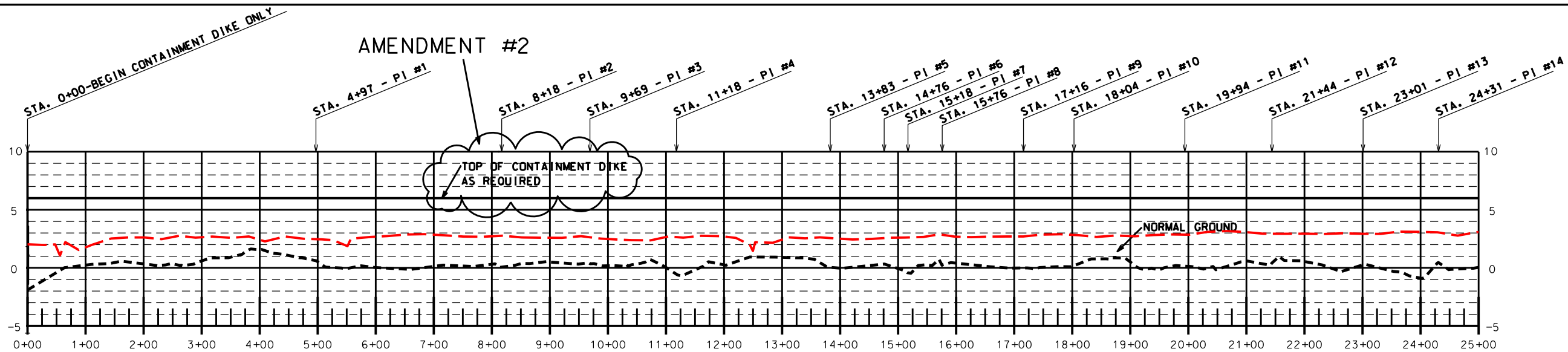
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NO.	DATE	APPROVED	TITLE



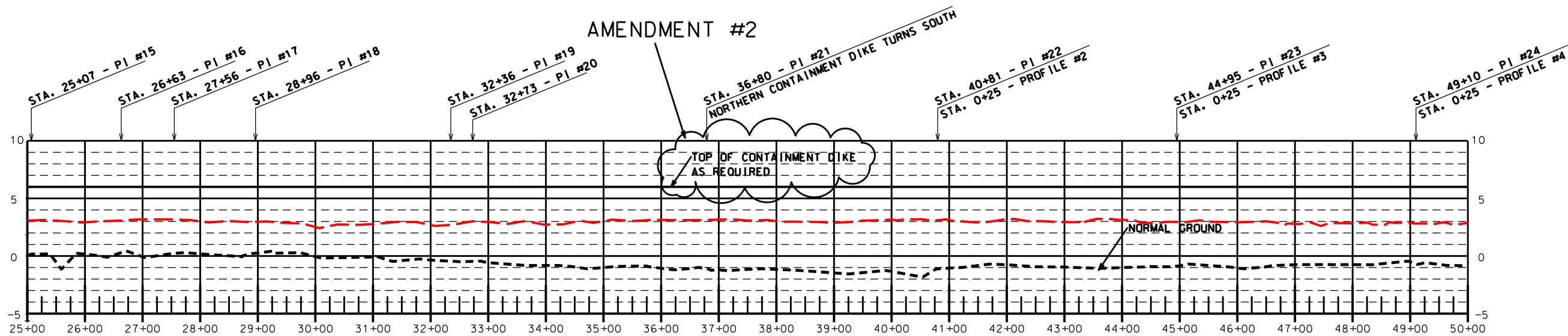
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LA-346  
Drawing Name  
LA346024.dgn

PLAN VIEW-NORTHERN MARSH CREATION AREA  
TE-46 - WEST LAKE BOUDREUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

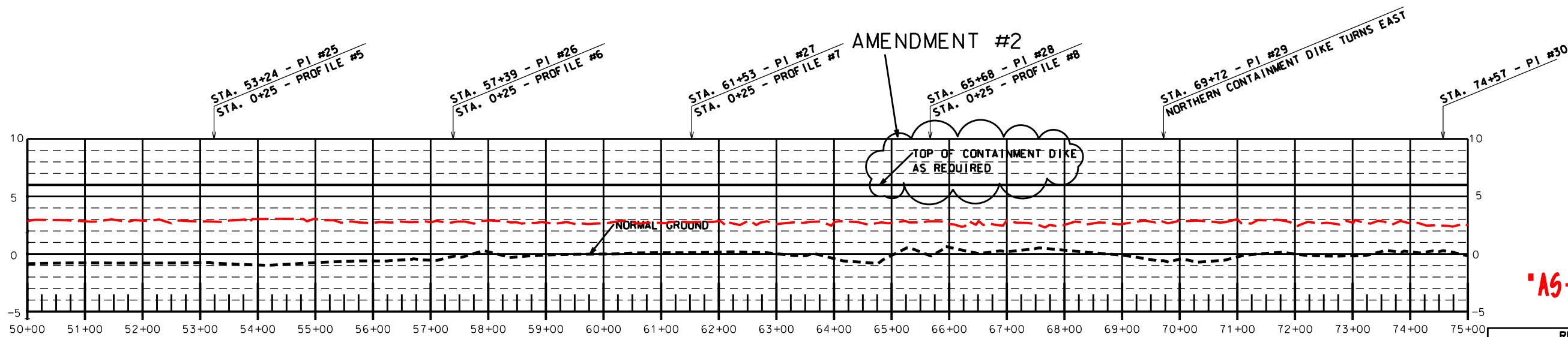
Designed	R. FAULKNER	Date	01/05
Drawn	A.J. GREMILLION		01/05
Checked	B.A. STICKER		06/06
Approved	E.J. GIERING III		12/06



**PROFILE - NORTHERN CONTAINMENT DIKE ONLY**  
**STATION 0+00 - 25+00**



**PROFILE - NORTHERN CONTAINMENT DIKE ONLY**  
**STATION 25+00 - 50+00**



**PROFILE - NORTHERN CONTAINMENT DIKE ONLY**  
**STATION 50+00 - 75+00**

**"AS-BUILT"**

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	4/07	R.F.	D.E.

Date

01/05

Designed

R. FAULKNER

Drawn

A.J. GREMILLON

Checked

B.A. STICKER

Approved

E.J. GIERING III

PROFILE-NORTHERN CONTAINMENT DIKE

TE-46 - WEST LAKE BOUDREAU

CONSTRUCTION UNIT NO. 1

TERREBONNE PARISH, LOUISIANA

NRCS

Natural Resources Conservation Service

United States Department of Agriculture

File Name

LA-346

Drawing Name

LA346025A2.dgn

Sheet

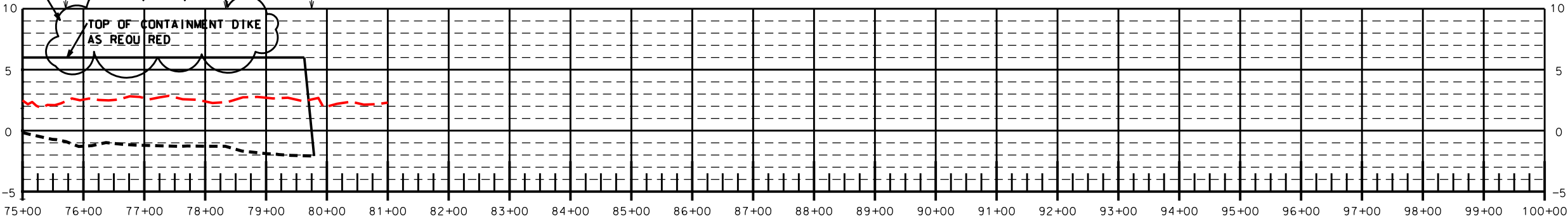
25A2 of 65

AMENDMENT #2

STA. 75+71 - PI #31

STA. 78+34 - PI #32


STA. 79+75 - END CONTAINMENT DIKE ONLY



**PROFILE - NORTHERN CONTAINMENT DIKE ONLY**  
**STATION 75+00 - 79+75**

"AS-BUILT"

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	4/07	R.F.	D.E.

**NRC**  
Natural Resources Conservation Service  
United States Department of Agriculture

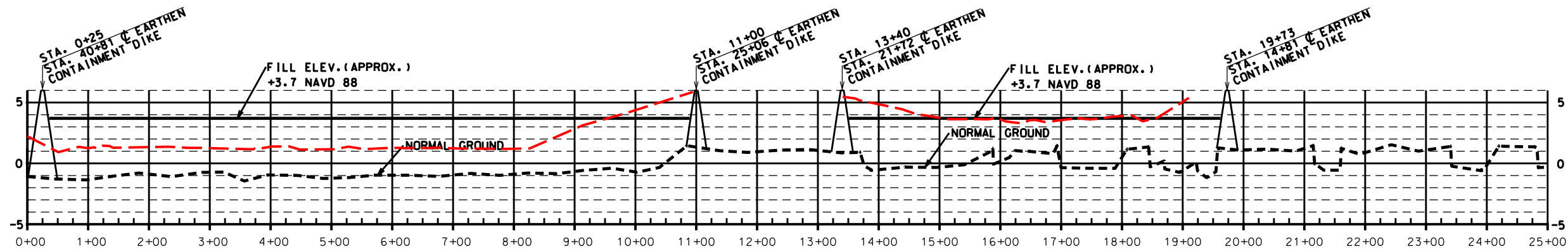
PROFILE-NORTHERN CONTAINMENT DIKE  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

File Name  
LA-346

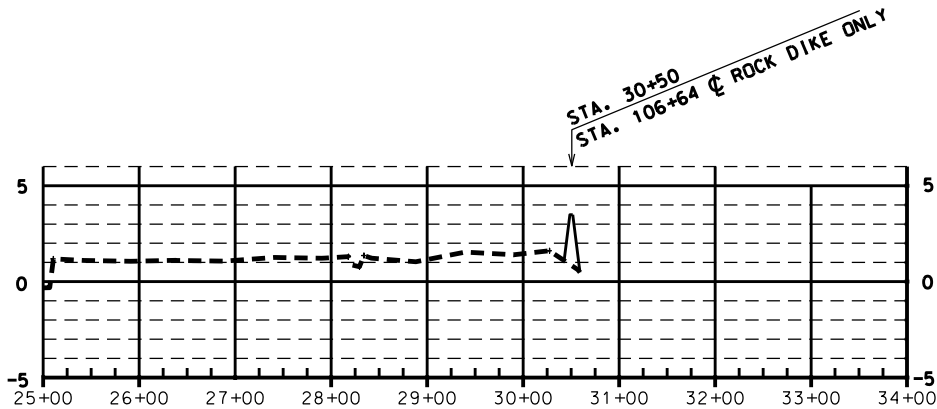
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Sheet 26A2 of 65

Designed	R. FAULKNER	Date	01/05
Drawn	A.J. GREMILLION		01/05
Checked	B.A. STICKER		06/06
Approved	E.J. GIERING III		12/06



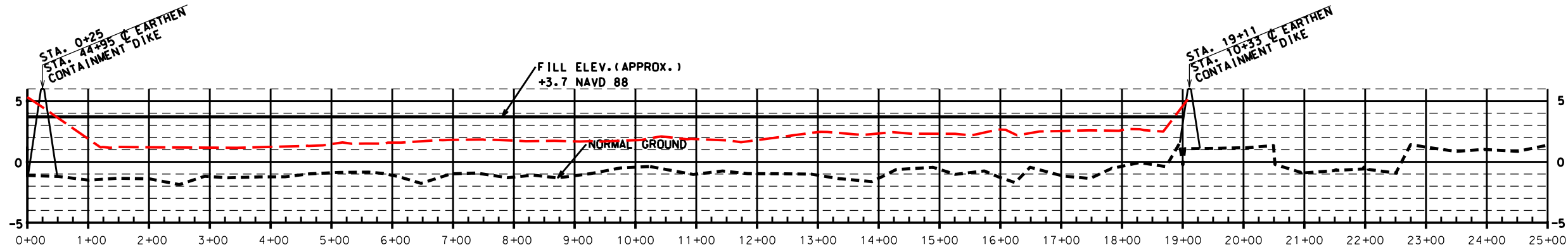
PROFILE #2 (WEST TO EAST)  
STATION 0+00 - 25+00



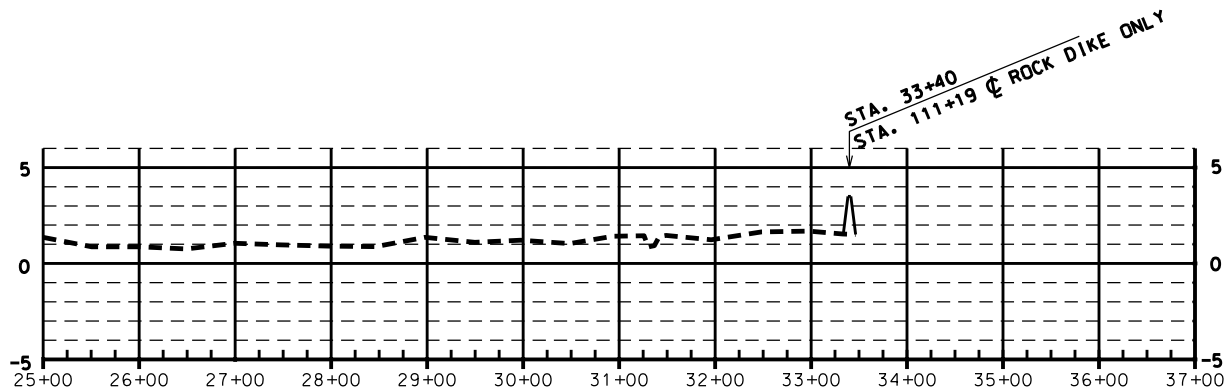
PROFILE #2 (WEST TO EAST)  
STATION 25+00 - 33+39

NOTE:

THE ELEVATIONS SHOWN ARE FROM PRE-HURRICANE SURVEYS.  
THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.



PROFILE #3 (WEST TO EAST)  
STATION 0+00 - 25+00



PROFILE #3 (WEST TO EAST)  
STATION 25+00 - 36+49

"AS-BUILT"

REVISIONS			
NO.	DATE	APPROVED	TITLE

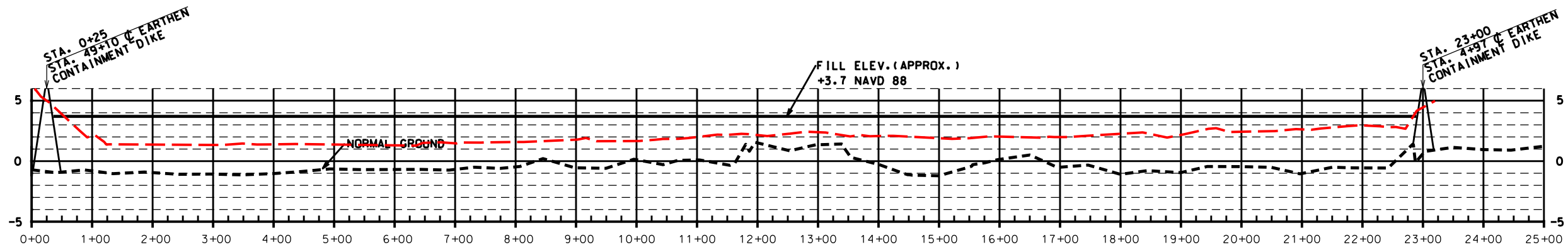
Date		01/05		01/05		06/06		12/06	
Designed	R. FAULKNER	Drawn	A.J.J. GREMILLION	Checked	B.A. STICKER	Approved	E.J.J. GIERING III		

PROFILE #2 & PROFILE #3  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

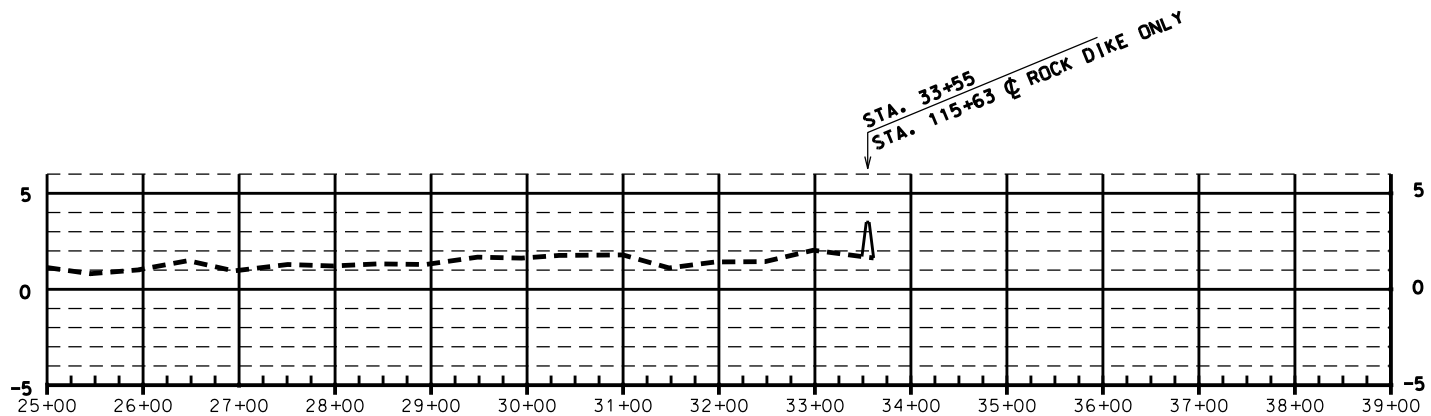


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Drawing Name	LA346027.dgn
Sheet	27 of 65

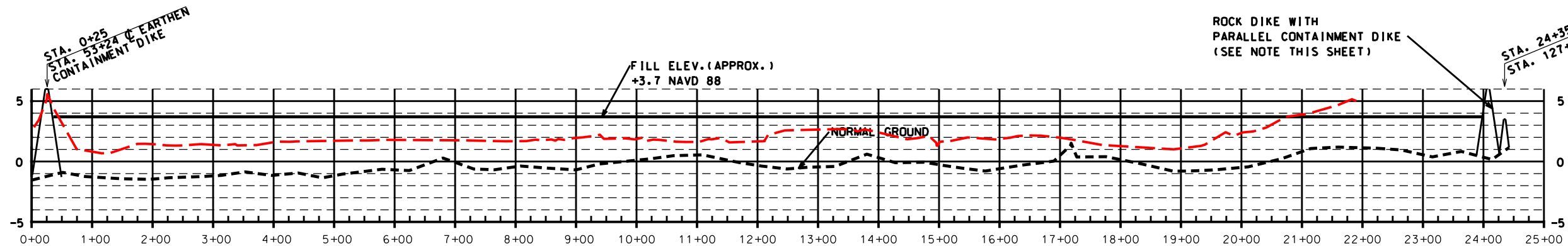




PROFILE #4 (WEST TO EAST)  
STATION 0+00 - 25+00



PROFILE #4 (WEST TO EAST)  
STATION 25+00 - 38+45



PROFILE #5 (WEST TO EAST)  
STATION 0+00 - 25+00

NOTE:

THE ELEVATIONS SHOWN ARE FROM PRE-HURRICANE SURVEYS.  
THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.

NOTE:

THE LOCATION OF THE ROCK DIKE WITH THE PARALLEL CONTAINMENT DIKE IS APPROXIMATE. THE ROCK DIKE SHALL BE CONSTRUCTED FIRST AND THE ALIGNMENT OF THE ROCK DIKE SHALL BE DETERMINED IN THE FIELD BY THE C.O.T.R.

"AS-BUILT"

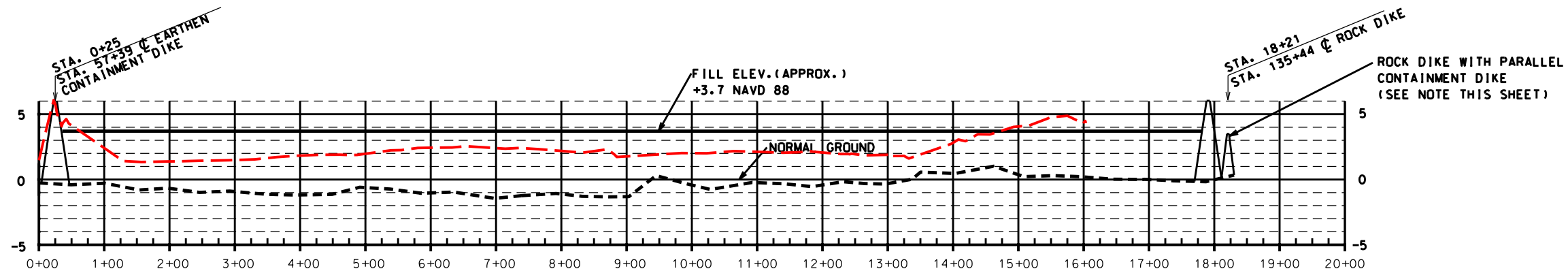
REVISIONS			
NO.	DATE	APPROVED	TITLE

Date		Date		Date	
Designed	R. FAULKNER	01/05	Drawn	A.J. GREMILLON	01/05
Checked	B.A. STICKER	06/06	Approved	E.J. GIERING III	12/06

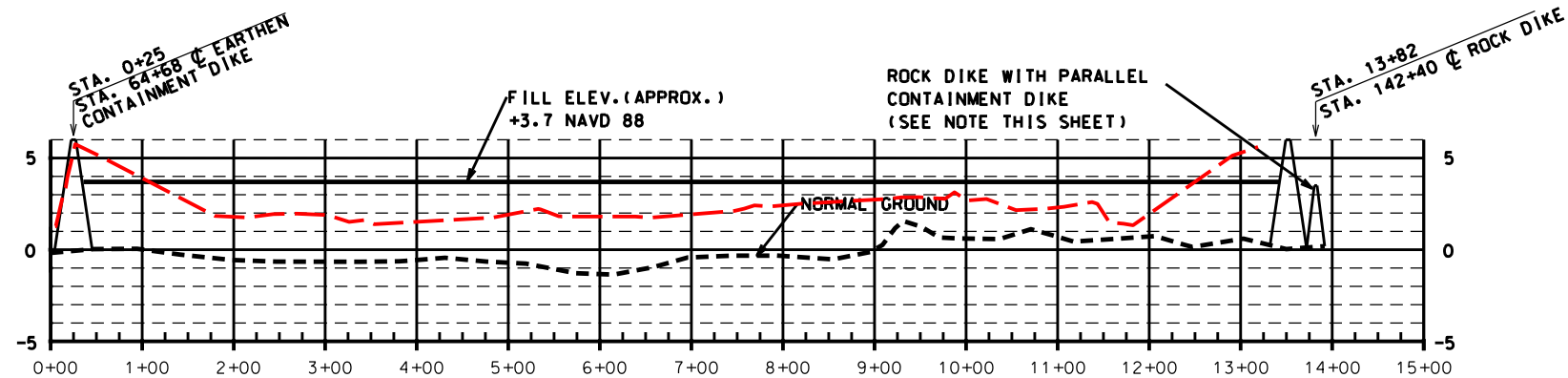
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TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name	LA-346
Drawing Name	LA346028.dgn
Sheet	28 of 65



**PROFILE #6 (WEST TO EAST)**  
STATION 0+00 - 25+00



**PROFILE #7 (WEST TO EAST)**  
STATION 0+00 - 25+00

NOTE:

THE ELEVATIONS SHOWN ARE FROM PRE-HURRICANE SURVEYS.  
THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.

NOTE:

THE LOCATION OF THE ROCK DIKE WITH THE PARALLEL CONTAINMENT DIKE IS APPROXIMATE. THE ROCK DIKE SHALL BE CONSTRUCTED FIRST AND THE ALIGNMENT OF THE ROCK DIKE SHALL BE DETERMINED IN THE FIELD BY THE C.O.T.R.

**"AS-BUILT"**

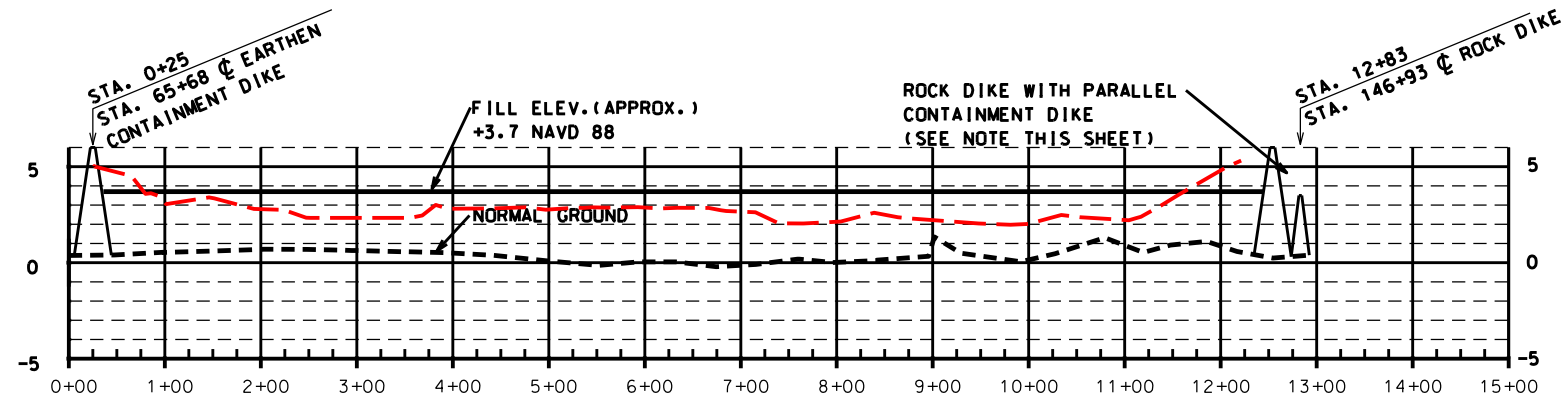
REVISIONS			
NO.	DATE	APPROVED	TITLE

Designed	R. FAULKNER	Date	01/05
Drawn	A.J. GREMILLON		01/05
Checked	B.A. STICKER		06/06
Approved	E.J. GIERING III		12/06

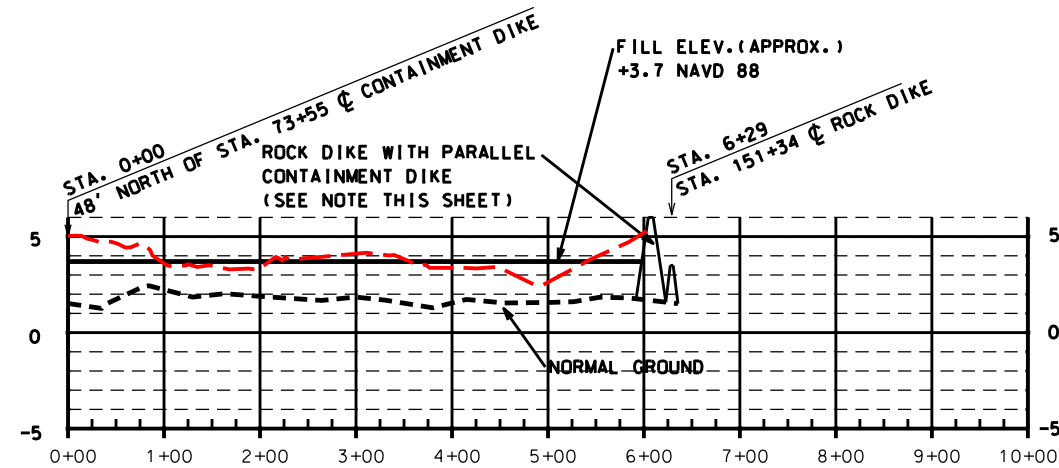
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TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name	LA-346
Drawing Name	LA346029.dgn
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**PROFILE #8 (WEST TO EAST)**  
STATION 0+00 - 24+72



**PROFILE #9 (WEST TO EAST)**  
STATION 0+00 - 15+54

NOTE:

THE ELEVATIONS SHOWN ARE FROM PRE-HURRICANE SURVEYS.  
THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.

NOTE:

THE LOCATION OF THE ROCK DIKE WITH THE PARALLEL CONTAINMENT DIKE IS APPROXIMATE. THE ROCK DIKE SHALL BE CONSTRUCTED FIRST AND THE ALIGNMENT OF THE ROCK DIKE SHALL BE DETERMINED IN THE FIELD BY THE C.O.T.R.

**"AS-BUILT"**

REVISIONS			
NO.	DATE	APPROVED	TITLE

Designed	R. FAULKNER	Date	01/05
Drawn	A.J.J. GREMILLION	Date	01/05
Checked	B.A. STICKER	Date	06/06
Approved	E.J.J. GIERING III	Date	12/06

PROFILE #8 & PROFILE #9  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name	LA-346
Drawing Name	LA346030.dgn
Sheet	30 of 65

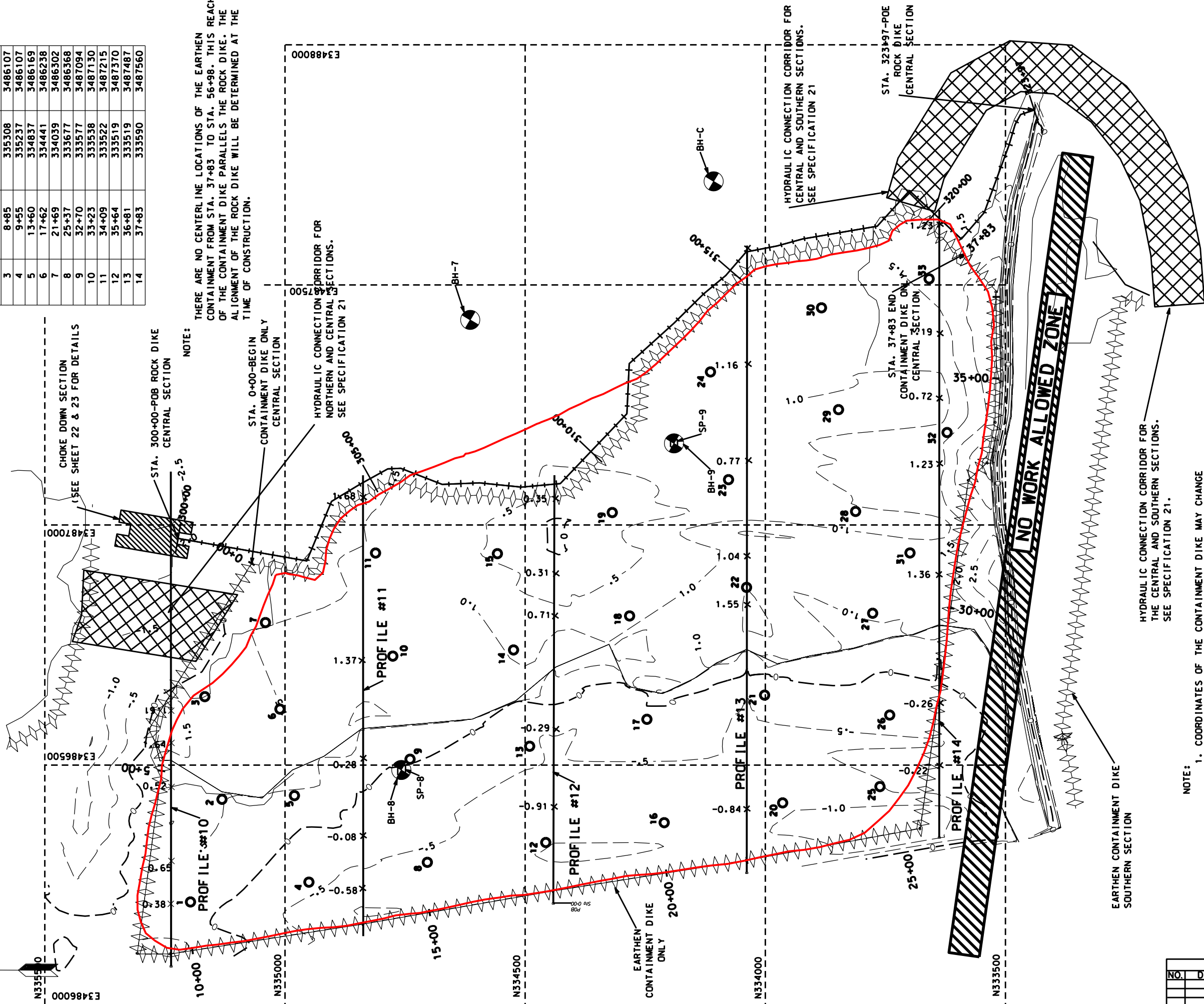
NOTE:  
SEE CONSTRUCTION SPECIFICATION 7 FOR  
COORDINATE LOCATION OF STAFF GAUGES.

○ - STAFF GAUGE

NOTE:  
MARSH CREATION ARE  
CENTRAL SEGMENT = 38 ACRES

NOTE:  
THE CENTERLINE LOCATIONS OF THE EARTHEN  
CONTAINMENT DIKE COULD BE ADJUSTED AS  
NEEDED IN THE FIELD AS CONCURRED IN  
BY THE COIR.

PT. #	STATION	NORTHING	EASTING
POB	0+00	335070	3486920
1	4+06	335284	3486574
2	4+75	335253	3486513
3	8+85	335308	3486107
4	9+55	335237	3486107
5	13+60	334837	3486169
6	17+62	334441	3486238
7	21+69	334039	3486302
8	25+37	333677	3486368
9	32+70	333577	3487094
10	33+23	333538	3487130
11	34+09	333522	3487215
12	35+64	333519	3487370
13	36+81	333519	3487487
14	37+83	333590	3487560



NOTE:  
1. COORDINATES OF THE CONTAINMENT DIKE MAY CHANGE  
DUE TO FINAL LOCATION OF ROCK IN ORDER TO MAINTAIN  
ACREAGE SHOWN ON SHEET 4.  
2. THE TOPO SHOWN IS FROM PRE-HURRICANE SURVEYS. THE  
ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.

## WEST LAKE BOUDREAUX - MARSH CREATION CENTRAL SECTION - PLAN VIEW

AS-BUILT

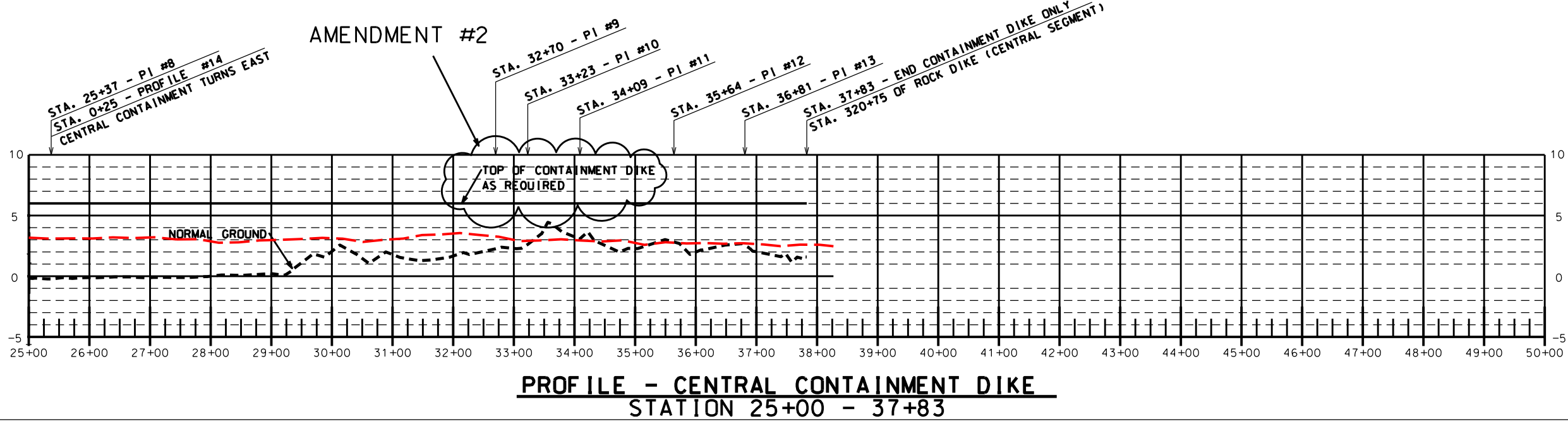
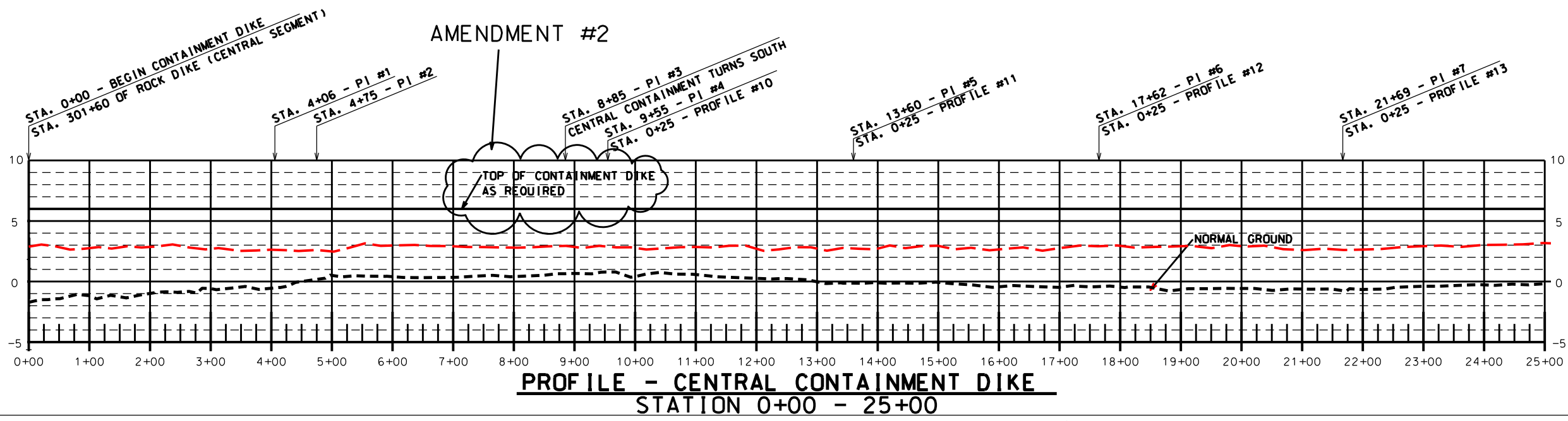
REVISIONS		
NO.	DATE	TITLE



File Name  
LA-346  
Drawing Name  
LA346031.dgn

PLAN VIEW-CENTRAL MARSH CREATION AREA  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

Designed	R. FAULKNER	Date	01/05
Drawn	A.J. GREMILLON		01/05
Checked	B.A. STICKER		06/06
Approved	E.J. GIERING III		12/06



"AS-BUILT"

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	4/07	R.F.	D.E.

Date

01/05

Designed

R. FAULKNER

Drawn

A.J. GREMILLON

Checked

B.A. STICKER

Approved

E.J. GIERING III

PROFILE-CENTRAL CONTAINMENT DIKE

TE-46 - WEST LAKE BOUDREAU

CONSTRUCTION UNIT NO. 1

TERREBONNE PARISH, LOUISIANA

NRCS

Natural Resources Conservation Service

United States Department of Agriculture

File Name

LA-346

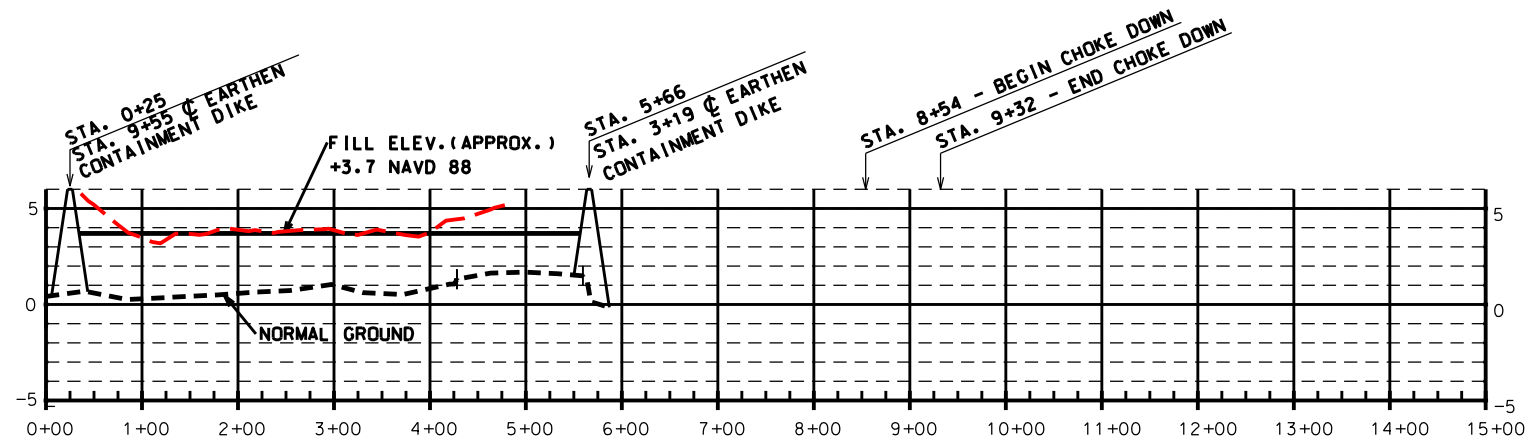
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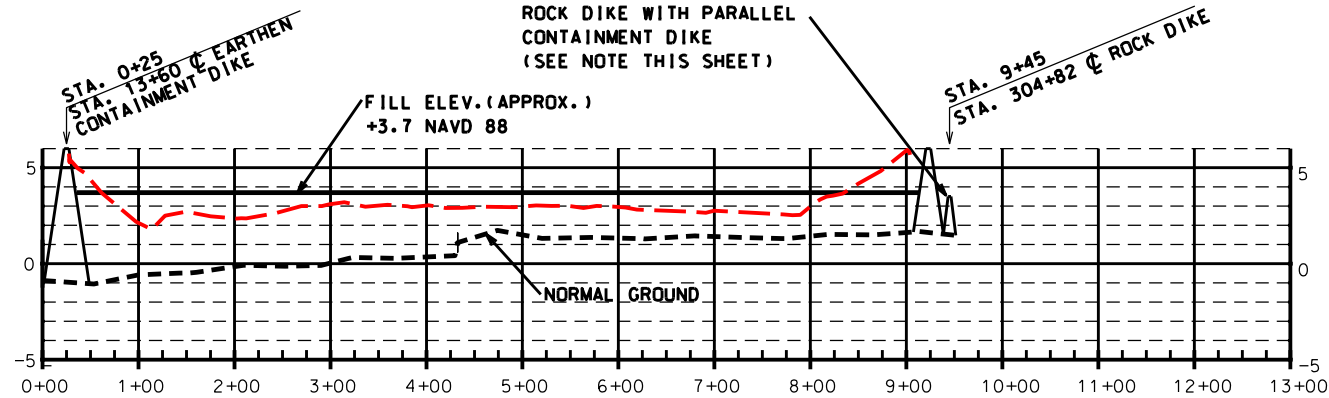
Sheet

32A2

of 65



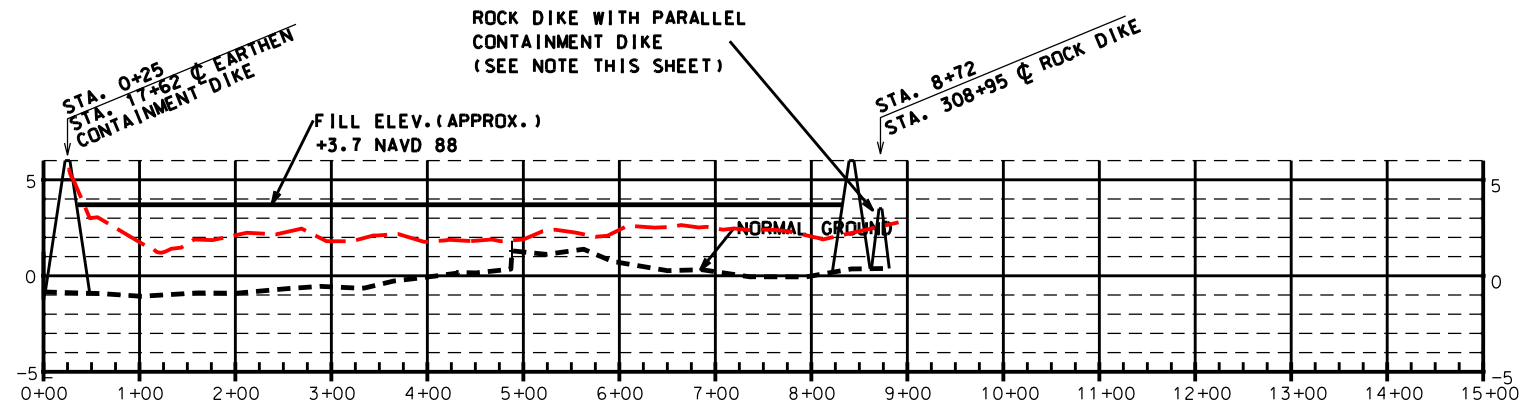
**PROFILE #10 (WEST TO EAST)**  
**STATION 0+00 - 14+19**



**PROFILE #11 (WEST TO EAST)**  
**STATION 0+00 - 12+78**

NOTE:

THE ELEVATIONS SHOWN ARE FROM PRE-HURRICANE SURVEYS.  
THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.



**PROFILE #12 (WEST TO EAST)**  
**STATION 0+00 - 14+31**

NOTE:

THE LOCATION OF THE ROCK DIKE WITH THE PARALLEL CONTAINMENT DIKE IS APPROXIMATE. THE ROCK DIKE SHALL BE CONSTRUCTED FIRST AND THE ALIGNMENT OF THE ROCK DIKE SHALL BE DETERMINED IN THE FIELD BY THE C.O.T.R.

**"AS-BUILT"**

REVISIONS			
NO.	DATE	APPROVED	TITLE

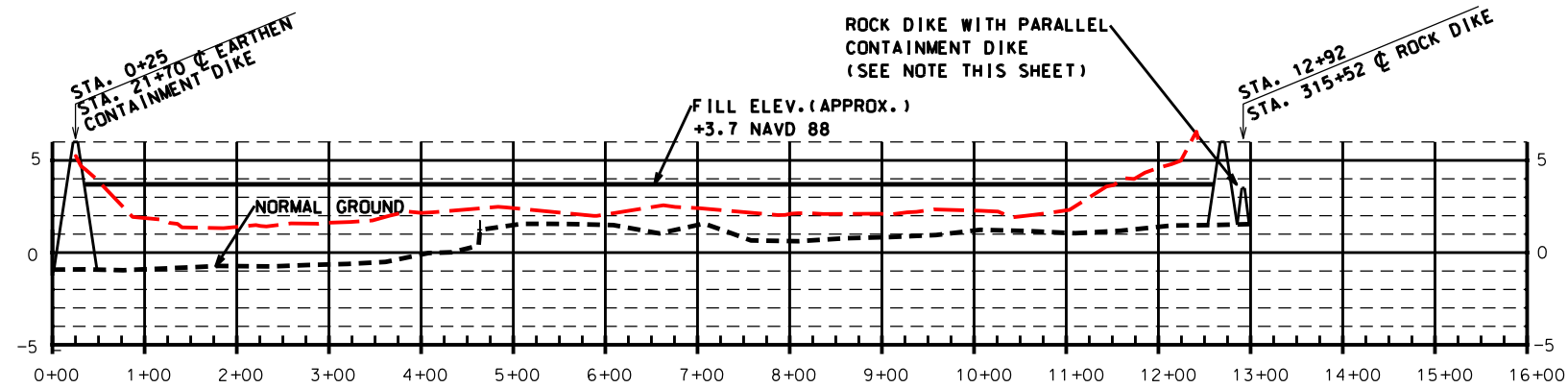
Designed	R. FAULKNER	Date	01/05
	A.J. GREMILLON	Drawn	01/05
	B.A. STICKER	Checked	06/06
	E.J. GIERING III	Approved	12/06

PROFILE #10, PROFILE #11 & PROFILE #12  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

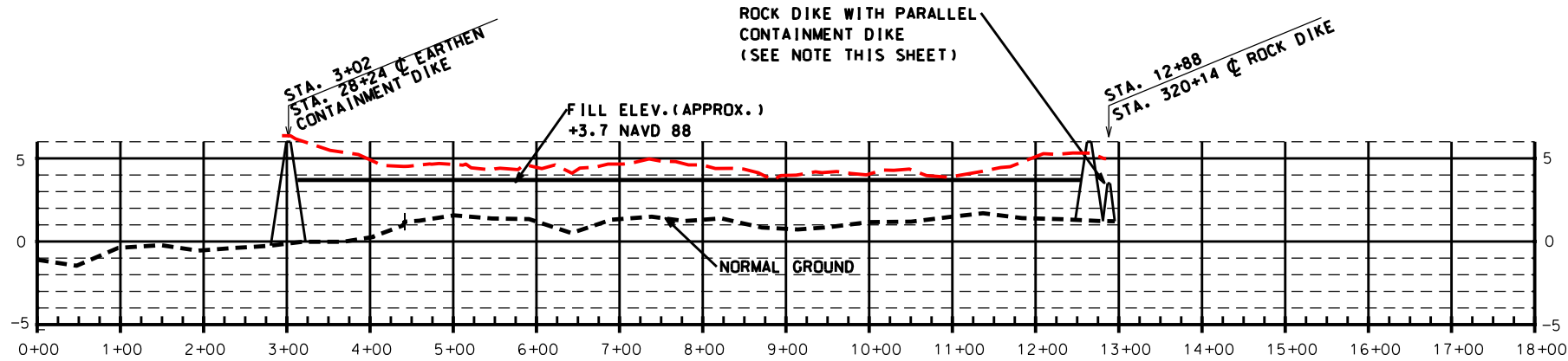


File Name	LA-346
Drawing Name	LA346033.dgn
Sheet	33 of 65





**PROFILE #13 (WEST TO EAST)**  
**STATION 0+00 - 15+90**



**PROFILE #14 (WEST TO EAST)**  
**STATION 0+00 - 17+38**

**NOTE:**

THE ELEVATIONS SHOWN ARE FROM PRE-HURRICANE SURVEYS.  
THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.

**"AS-BUILT"**

**NOTE:**

THE LOCATION OF THE ROCK DIKE WITH THE PARALLEL CONTAINMENT DIKE IS APPROXIMATE. THE ROCK DIKE SHALL BE CONSTRUCTED FIRST AND THE ALIGNMENT OF THE ROCK DIKE SHALL BE DETERMINED IN THE FIELD BY THE C.O.T.R.

REVISIONS			
NO.	DATE	APPROVED	TITLE

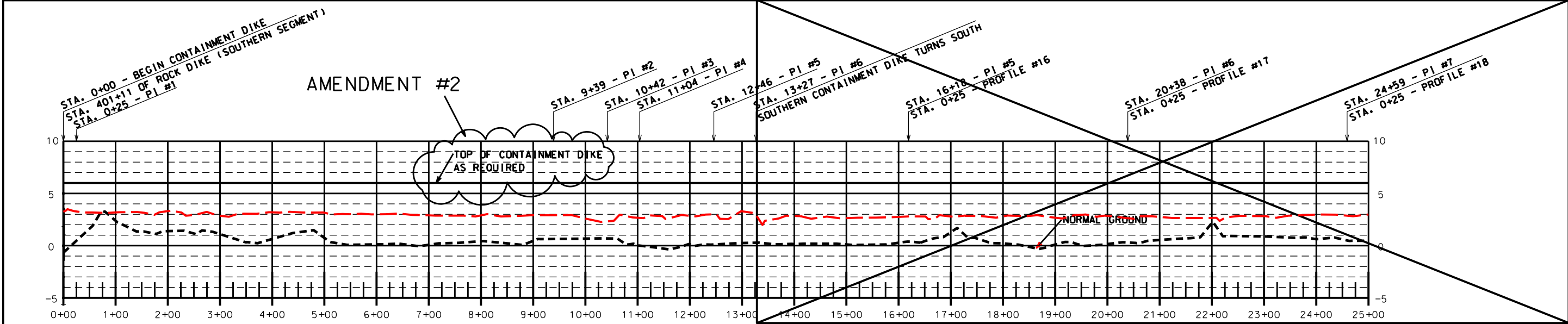
Date		Date		Date		Date	
Designed	R. FAULKNER	01/05	Drawn	A.J. GREMILLON	01/05	Checked	B.A. STICKER
							06/06
Approved	E.J. GIERING III	12/06					

PROFILE #13 & PROFILE #14  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

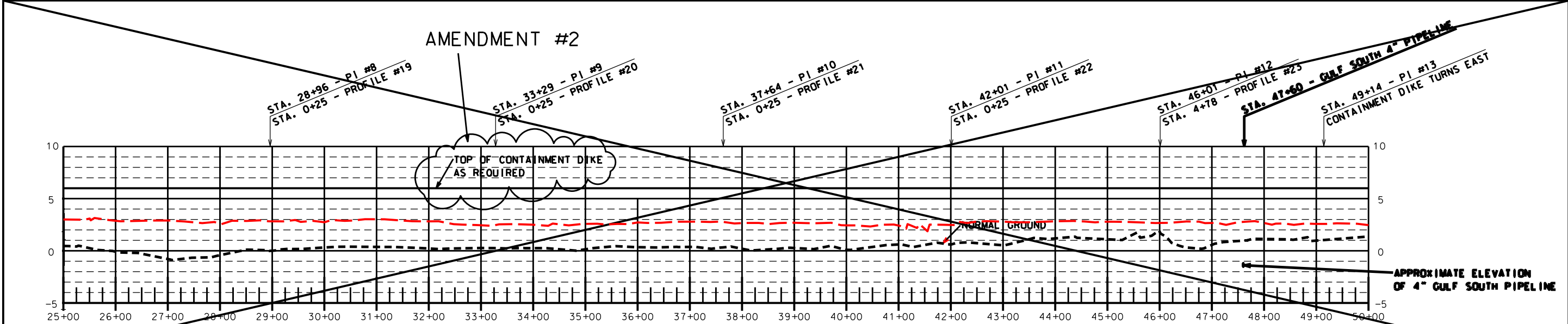


File Name	LA-346
Drawing Name	LA346034.dgn
Sheet	34 of 65





PROFILE - SOUTHERN CONTAINMENT DIKE  
STATION 0+00 - 25+00



PROFILE - SOUTHERN CONTAINMENT DIKE  
STATION 25+00 - 50+00

MODIFICATION #2 - PROFILE  
OF RELOCATED CONTAINMENT DIKE  
SHALL BE AS-BUILT

AS-BUILT

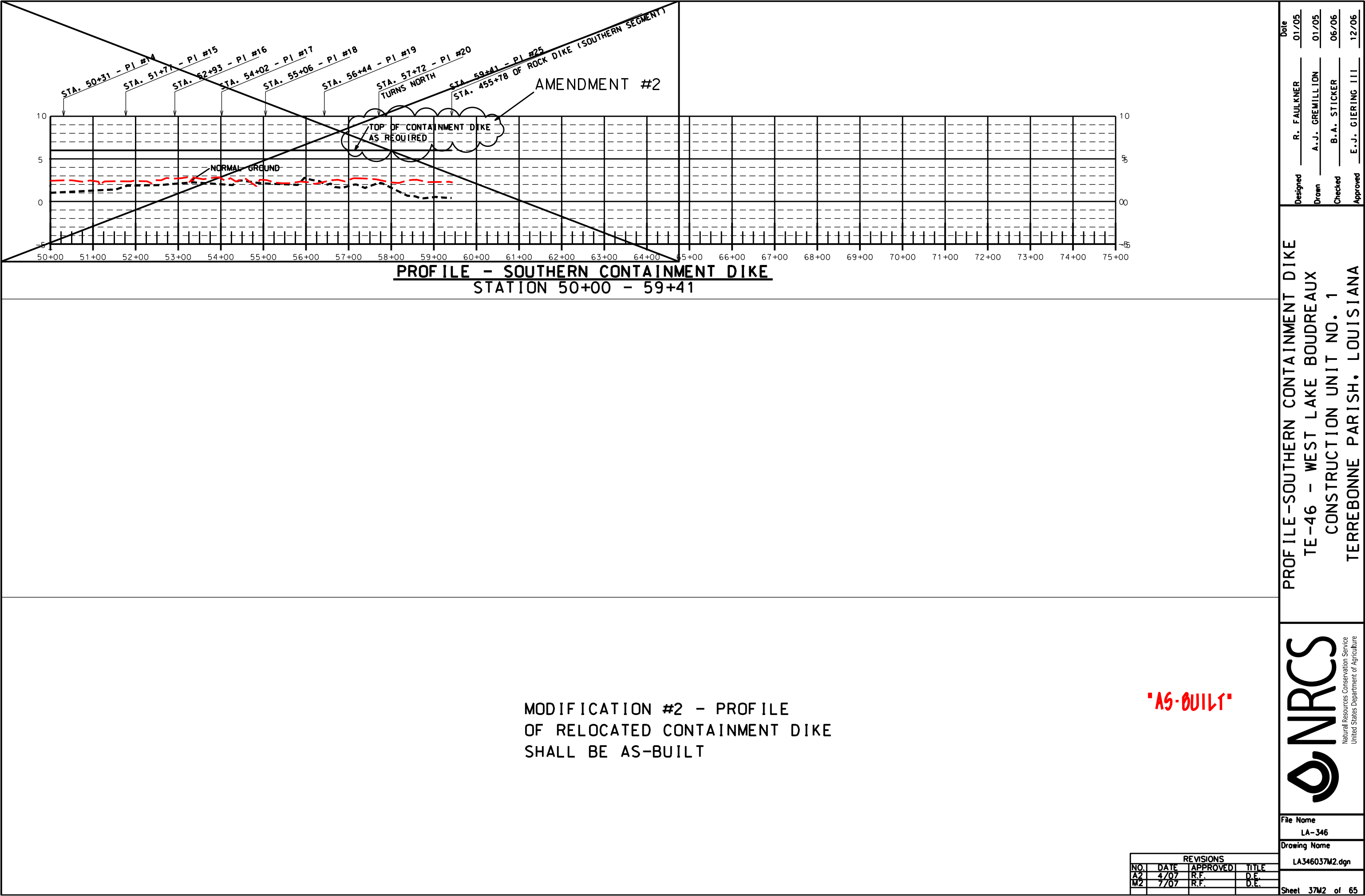
Date	01/05
Designed	R. FAULKNER
Drawn	A.J. GREMILLON
Checked	B.A. STICKER
Approved	E.J. GIERING III

PROFILE-SOUTHERN CONTAINMENT DIKE  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name	LA-346
Drawing Name	LA346036M2.dgn
Sheet	36M2 of 65

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	4/07	R.F.	D.E.
M2	7/07	R.F.	D.E.



Designed	R. FAULKNER	Date	01/05
Drawn	A.J. GREMILLION		01/05
Checked	B.A. STICKER		06/06
Approved	E.J. GIERING III		12/06

PROFILE-SOUTHERN CONTAINMENT DIKE  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

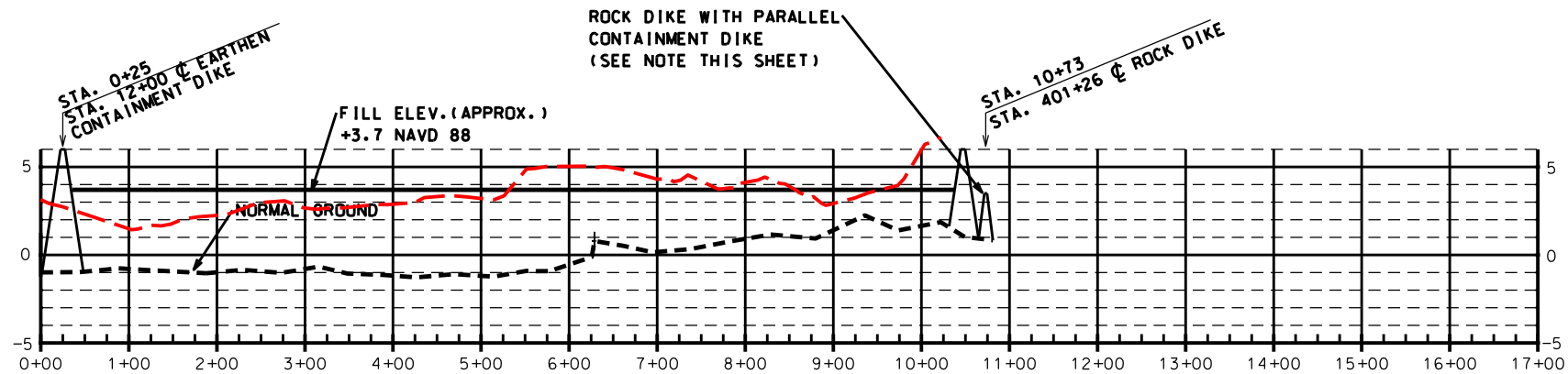
**NRCS**  
Natural Resources Conservation Service  
United States Department of Agriculture

File Name  
LA-346

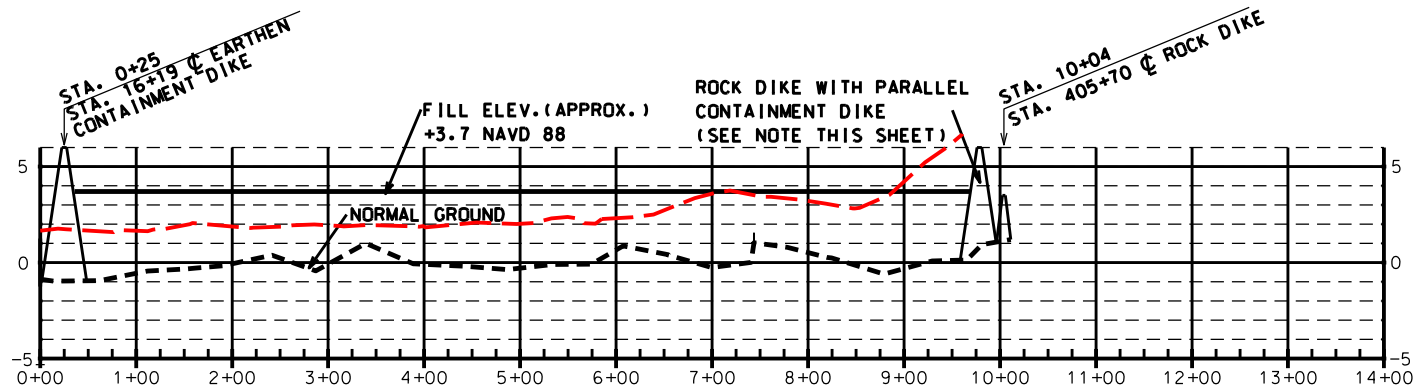
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Sheet 37M2 of 65

REVISIONS			
NO.	DATE	APPROVED	TITLE
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M2	7/07	R.F.	D.E.



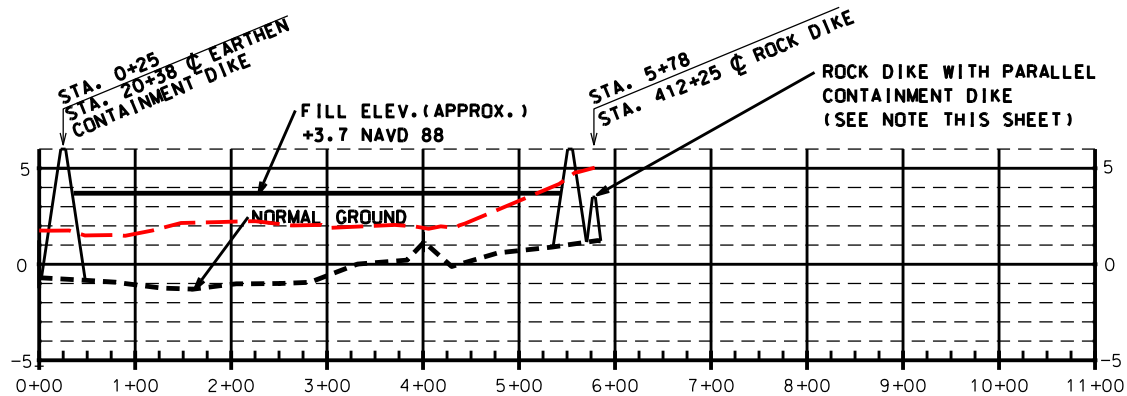
**PROFILE #15 (WEST TO EAST)**  
**STATION 0+00 - 16+59**



**PROFILE #16 (WEST TO EAST)**  
**STATION 0+00 - 13+72**

NOTE:

THE ELEVATIONS SHOWN ARE FROM PRE-HURRICANE SURVEYS.  
THE ACTUAL ELEVATIONS MAY BE DIFFERENT THAN THOSE SHOWN.



**PROFILE #17 (WEST TO EAST)**  
**STATION 0+00 - 10+83**

NOTE:

THE LOCATION OF THE ROCK DIKE WITH THE PARALLEL CONTAINMENT DIKE IS APPROXIMATE. THE ROCK DIKE SHALL BE CONSTRUCTED FIRST AND THE ALIGNMENT OF THE ROCK DIKE SHALL BE DETERMINED IN THE FIELD BY THE C.O.T.R.

**"AS-BUILT"**

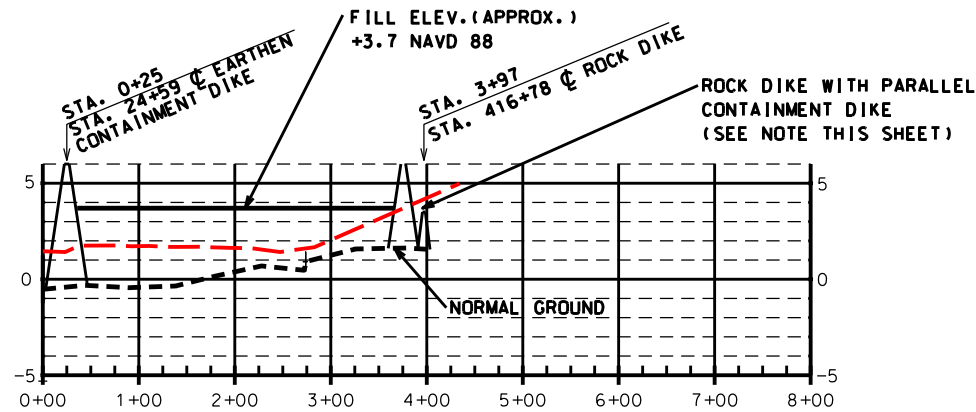
Designed	Date	
	R. FAULKNER	01/05
	A.J. GREMILLION	01/05
	B.A. STICKER	06/06
Drawn	E.J. GIERING III	
Checked	12/06	
Approved		

PROFILE #15, PROFILE #16 & PROFILE #17  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

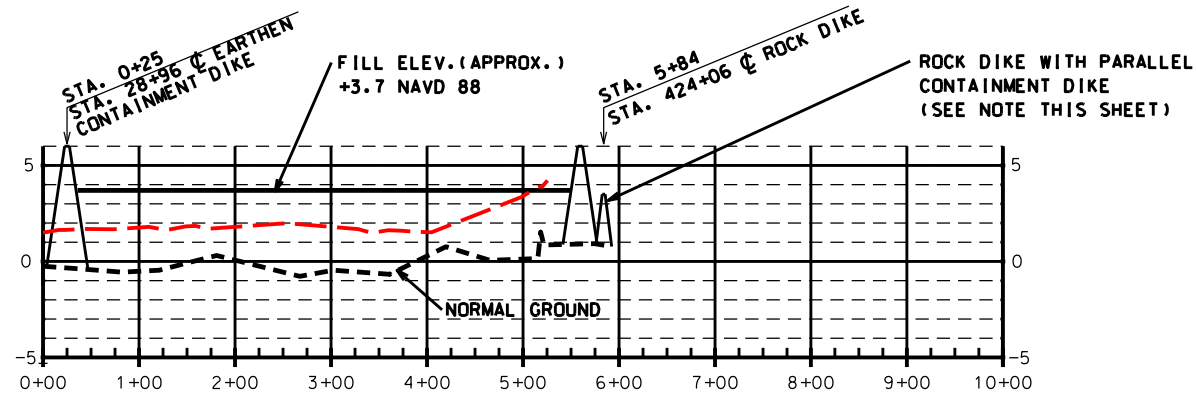


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LA-346	
Drawing Name	
LA346038.dgn	
Sheet 38 of 65	

REVISIONS			
NO.	DATE	APPROVED	TITLE



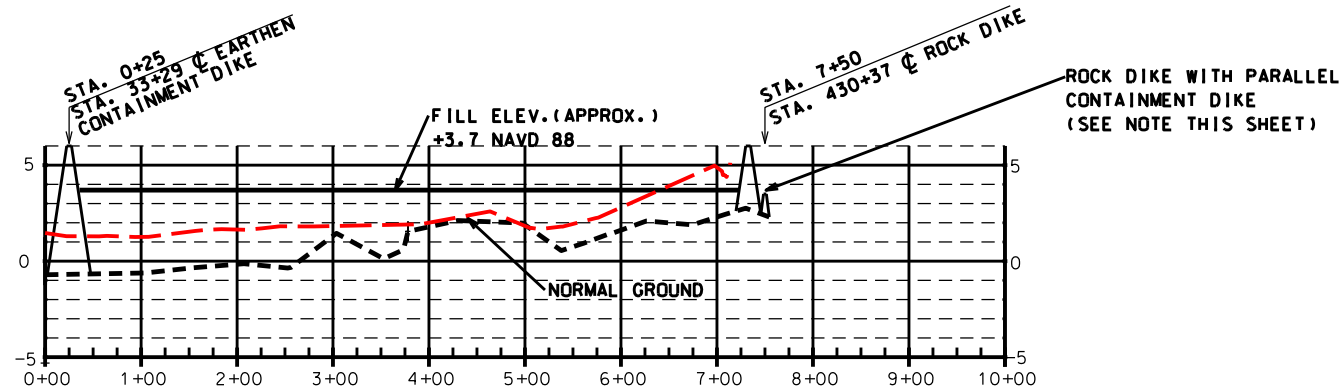
PROFILE #18 (WEST TO EAST)  
STATION 0+00 - 12+01



PROFILE #19 (WEST TO EAST)  
STATION 0+00 - 13+15

NOTE :

THE ELEVATIONS SHOWN ARE FROM PRE-HURRICANE SURVEYS.  
THE ACTUAL ELEVATIONS MAY BE DIFFERNT THAN THOSE SHOWN.



PROFILE #20 (WEST TO EAST)  
STATION 0+00 - 13+21

NOTE :

THE LOCATION OF THE ROCK DIKE WITH THE PARALLEL  
CONTAINMENT DIKE IS APPROXIMATE. THE ROCK DIKE  
SHALL BE CONSTRUCTED FIRST AND THE ALIGNMENT OF  
THE ROCK DIKE SHALL BE DETERMINED IN THE FIELD BY  
THE C.O.T.R.

"AS-BUILT"

Date	01/05
Designed	R. FAULKNER
Drawn	A.J.J. GREMILLION
Checked	B.A. STICKER
Approved	E.J.J. GIERING III

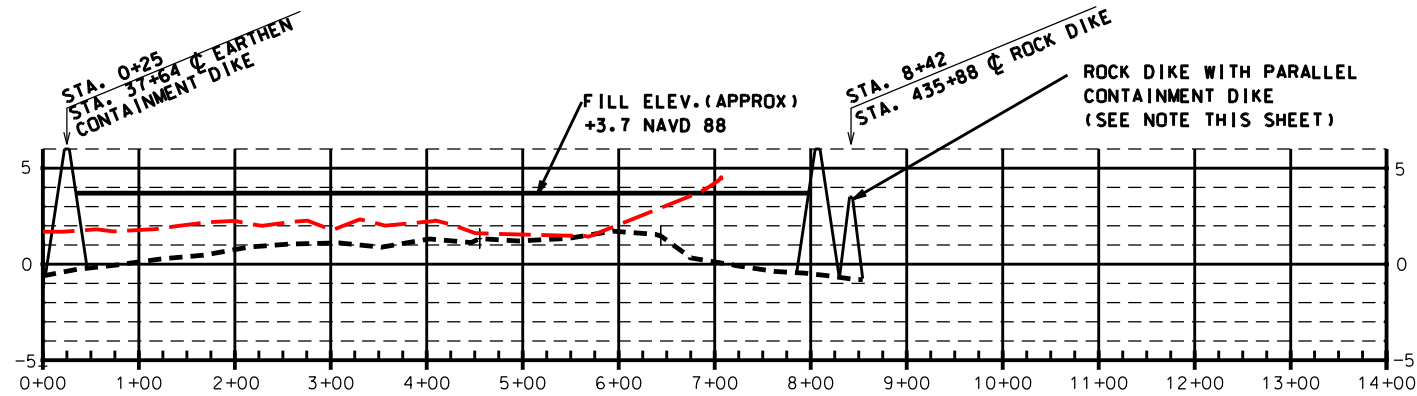
PROFILE #18, PROFILE #19 & PROFILE #20  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



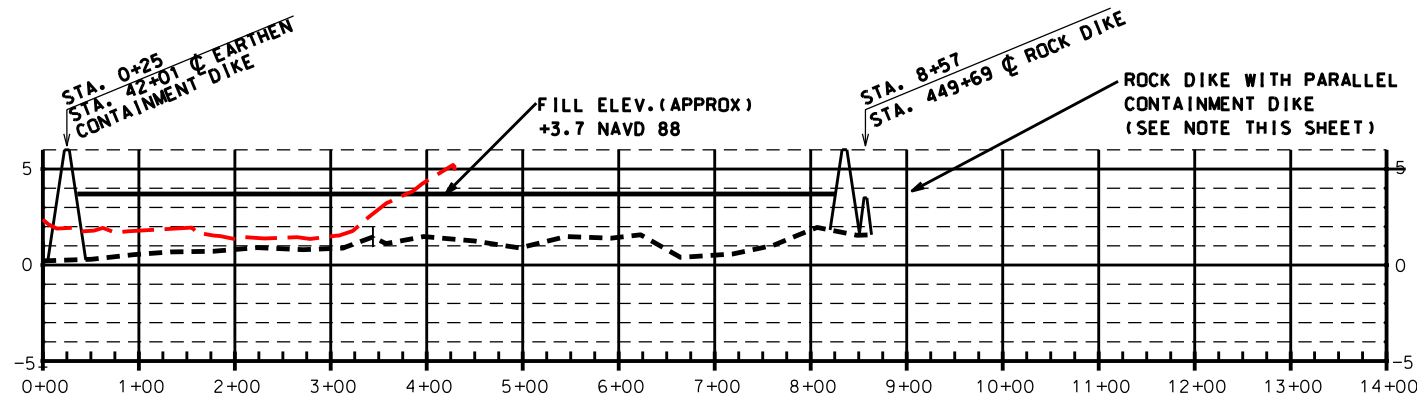
File Name	LA-346
Drawing Name	LA346039.dgn
Sheet	39 of 65

REVISIONS			
NO.	DATE	APPROVED	TITLE





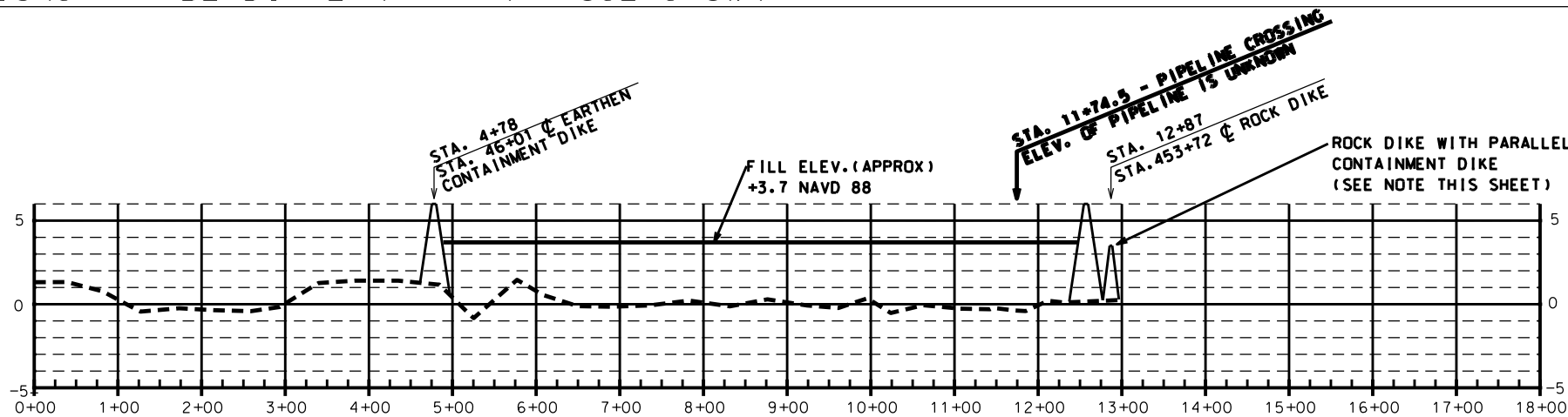
**PROFILE #21 (WEST TO EAST)**  
STATION 0+00 - 18+29



**PROFILE #22 (WEST TO EAST)**  
STATION 0+00 - 13+98

NOTE:

THE ELEVATIONS SHOWN ARE FROM PRE-HURRICANE SURVEYS.  
THE ACTUAL ELEVATIONS MAY BE DIFFERNT THAN THOSE SHOWN.



**PROFILE #23 (WEST TO EAST)**  
STATION 0+00 - 17+81

NOTE:

THE LOCATION OF THE ROCK DIKE WITH THE PARALLEL  
CONTAINMENT DIKE IS APPROXIMATE. THE ROCK DIKE  
SHALL BE CONSTRUCTED FIRST AND THE ALIGNMENT OF  
THE ROCK DIKE SHALL BE DETERMINED IN THE FIELD BY  
THE C.O.T.R.

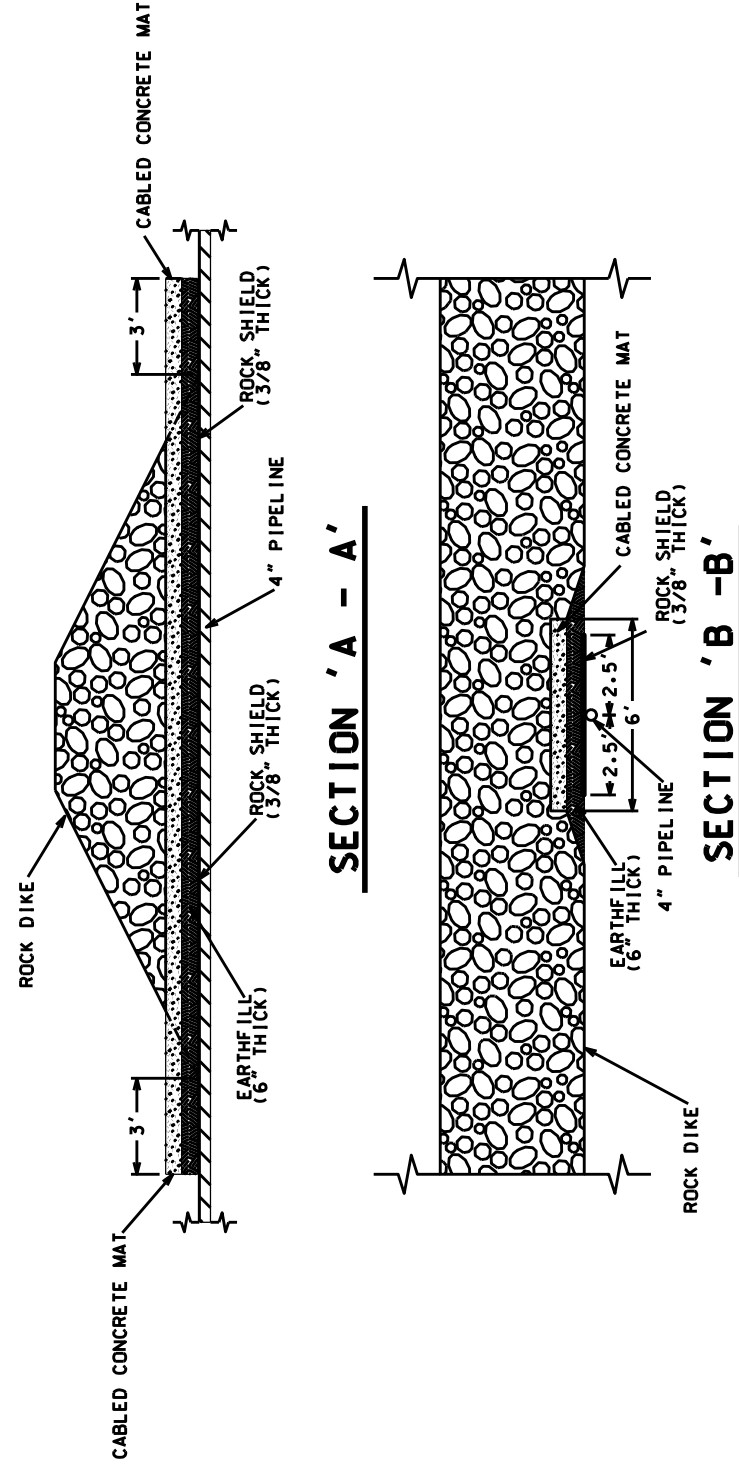
REVISIONS			
NO.	DATE	APPROVED	TITLE

Date		Date		Date		Date	
Designed	R. FAULKNER	01/05	Drawn	A.J.J. GREMILLION	01/05	Checked	B.A. STICKER
							06/06
Approved	E.J.J. GIERING III	12/06					

PROFILE #21, PROFILE #22 & PROFILE #23  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



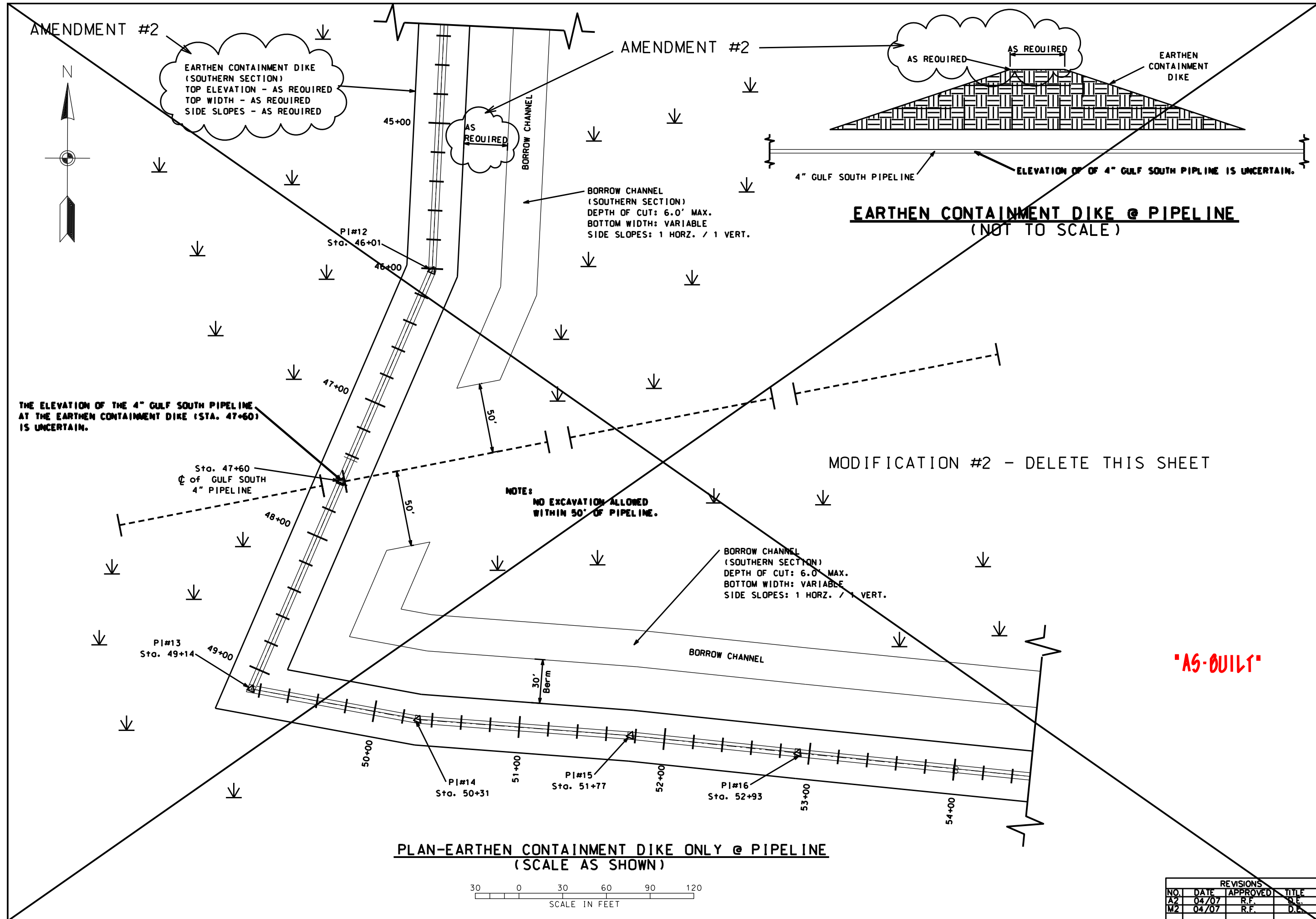
File Name	LA-346
Drawing Name	LA346040.dgn
Sheet	40 of 65



**DETAILS-ROCK DIKE @ 4" PIPELINE**  
**(NOT TO SCALE)**

**NOTE:  
SEE CONSTRUCTION SPECIFICATIONS, SPECIAL PROVISIONS  
FOR PIPELINE COMPANY CONTACT REQUIREMENTS**

REVISIONS			
NO.	DATE	APPROVED	TITLE



AMENDMENT #2

AMENDMENT #2

EARTHEN CONTAINMENT DIKE  
(SOUTHERN SECTION)  
TOP ELEVATION - AS REQUIRED  
TOP WIDTH - AS REQUIRED  
SIDE SLOPES - AS REQUIRED

AS  
REQUIRED

BORROW CHANNEL

BORROW CHANNEL  
(SOUTHERN SECTION)  
DEPTH OF CUT: 6.0' MAX.  
BOTTOM WIDTH: VARIABLE  
SIDE SLOPES: 1 HORIZ. / 1 VERT.

AS REQUIRED

AS REQUIRED

EARTHEN  
CONTAINMENT  
DIKE

4" GULF SOUTH PIPELINE

ELEVATION OF 4" GULF SOUTH PIPELINE IS UNCERTAIN.

**EARTHEN CONTAINMENT DIKE @ PIPELINE**  
(NOT TO SCALE)

THE ELEVATION OF THE 4" GULF SOUTH PIPELINE  
AT THE EARTHEN CONTAINMENT DIKE (STA. 47+60)  
IS UNCERTAIN.

Sta. 47+60  
C of GULF SOUTH  
4" PIPELINE

NOTE:  
NO EXCAVATION ALLOWED  
WITHIN 50' OF PIPELINE.

MODIFICATION #2 - DELETE THIS SHEET

BORROW CHANNEL  
(SOUTHERN SECTION)  
DEPTH OF CUT: 6.0' MAX.  
BOTTOM WIDTH: VARIABLE  
SIDE SLOPES: 1 HORIZ. / 1 VERT.

BORROW CHANNEL

30'  
Berm

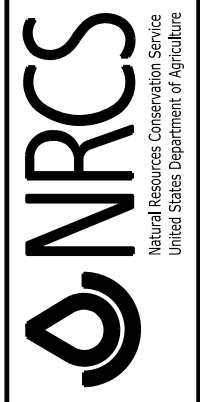
**PLAN-EARTHEN CONTAINMENT DIKE ONLY @ PIPELINE**  
(SCALE AS SHOWN)

30 0 30 60 90 120  
SCALE IN FEET

**"AS-BUILT"**

Date	01/05
Designed	R. FAULKNER
Drawn	A.J. GREMILLION
Checked	B.A. STICKER
Approved	E.J. CIERING

DETAILS- CONTAINMENT DIKE @ PIPELINE  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



File Name	LA-346
Drawing Name	LA346042M2.dgn
Sheet	42M2 of 65

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.
M2	04/07	R.F.	D.E.



CROSS-TEX LPG  
10" PIPELINE

CROSS-TEX LPG  
10" PIPELINE

GULF SOUTH  
4" PIPELINE

NOTES:

DREDGING SHALL BE PERFORMED IN ONE DREDGING COMPARTMENT (C1-C11) AT A TIME UNTIL ALL BORROW MATERIAL TO ELEVATION -20 HAS BEEN EXCAVATED. DREDGING SHALL BEGIN IN COMPARTMENT C-1 AND PROCEED IN ASCENDING ORDER FOR THE REMAINING COMPARTMENTS.

MAXIMUM DEPTH OF CUT SHALL BE ELEVATION -20.00 WITH A  $\pm 1.5'$  TOLERANCE.

AMENDMENT #2

NOTE:

SEE SHEET 65 FOR COORDINATES AND DEPTH OF BORING HOLES OTHER THAN THE BORROW DENSITY SHOWN ON THIS SHEET.

BORROW AREA LIMITS  
APPROX. 79 ACRES

BORROW AREA LIMITS  
APPROX. 79 ACRES

PLAN MAP - BORROW AREA

TE-46

200 0 200 400 600 800

SCALE IN FEET  
CONTOUR INTERVAL = 1'

'AS-BUILT'

PLAN MAP - BORROW AREA  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERRBONE PARISH, LOUISIANA



FILE NAME  
LA-346

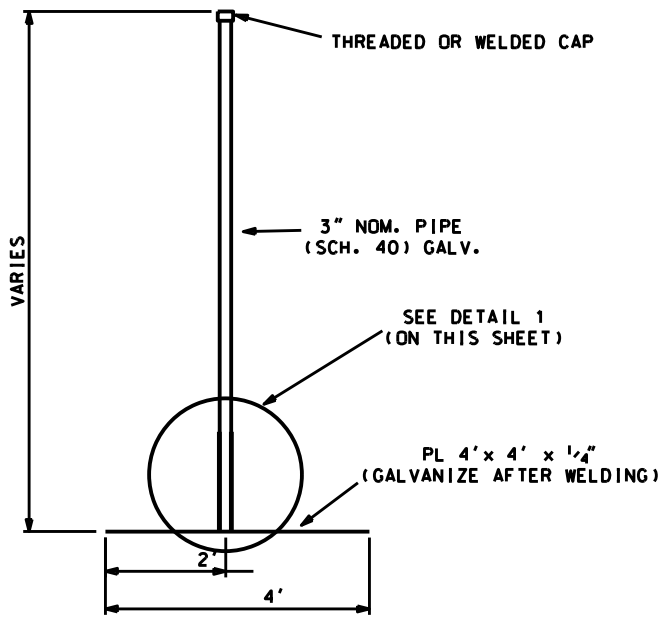
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SHEET 43A2 of 65

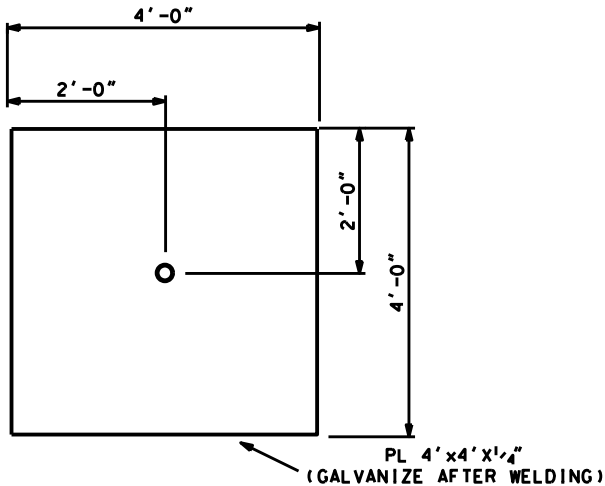
DESIGNED	R. FAULKNER	DATE	01/05
DRAWN	A.J. GREMILLION	DATE	01/05
CHECKED	B.A. STICKER	DATE	06/06
APPROVED	E.J. GIERING III	DATE	12/06

REVISIONS			
NO.	DATE	APPROVED	TITLE
A2	04/07	R.F.	D.E.

NOTE:  
IF THREADED CAP IS USED, COLD GALVINIZE  
THREADS AFTER INSTALLATION.



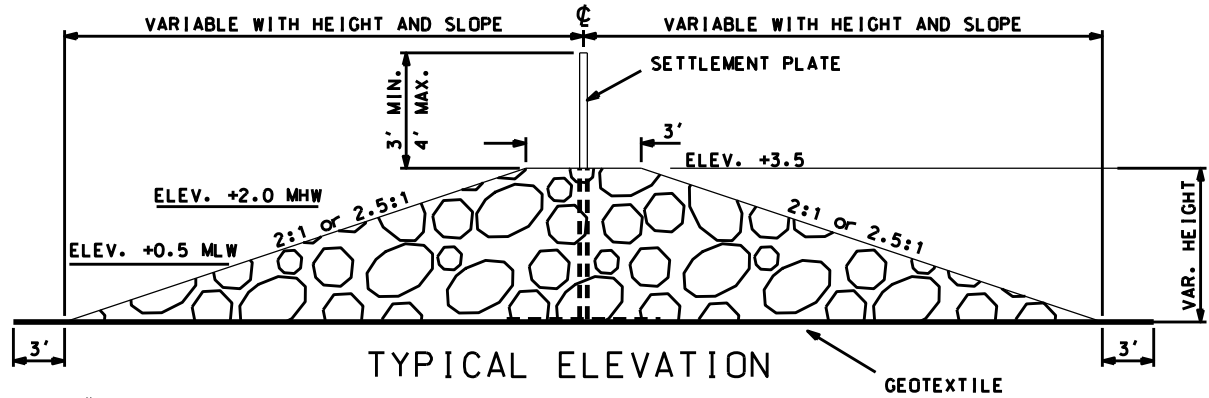
ELEVATION VIEW



PLAN VIEW

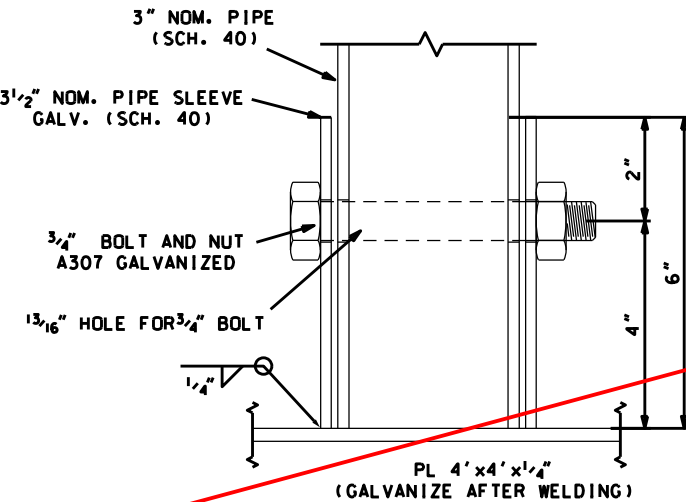
NOTE:  
THE SETTLEMENT PLATE ELEVATION SHALL BE DETERMINED  
BEFORE PLACING ROCK AND AT END OF CONSTRUCTION.

SETTLEMENT PLATE DETAILS  
(NOT TO SCALE)



TYPICAL ELEVATION

GEOTEXTILE



DETAIL 1 - 6" PIPE SLEEVE  
(NOT TO SCALE)

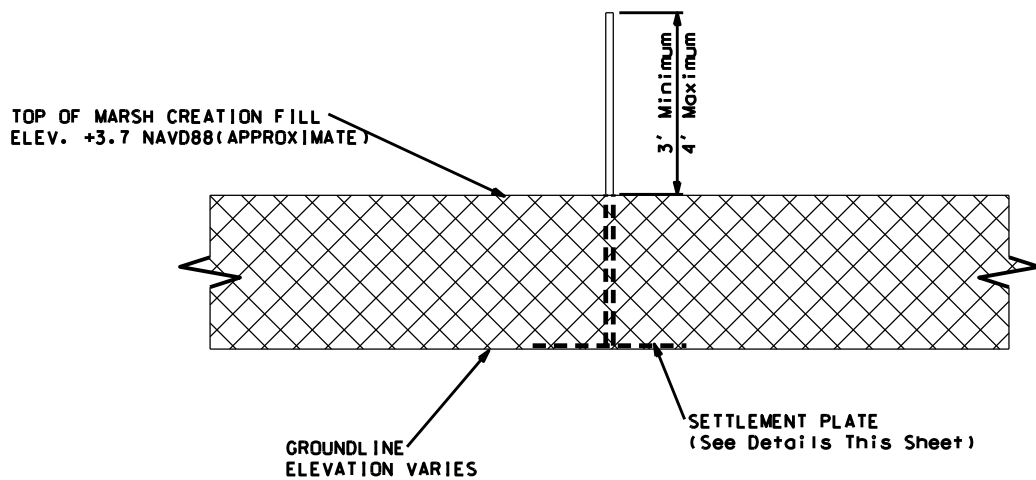
ROCK DIKE  
SETTLEMENT PLATES

SECTION	STATION
NORTHERN	STA. 112+25
NORTHERN	STA. 116+50
NORTHERN	STA. 126+25
NORTHERN	STA. 148+25
NORTHERN	STA. 153+25
CENTRAL	STA. 307+50
CENTRAL	STA. 315+75
SOUTHERN	STA. 405+25
SOUTHERN	STA. 417+50
SOUTHERN	STA. 431+25
SOUTHERN	STA. 444+50

ROCK DIKE SETTLEMENT PLATES

N337929.38	#3409901.08	SL. 5.62
N337618.04	#3409666.66	SL. 7.82
N337398.11	#3408812.15	SL. 4.33
N335997.22	#3407207.54	SL. 5.30
N335527.11	#3407017.97	SL. 6.56
N334592.66	#3407204.28	SL. 7.91
N333698.48	#3407599.24	SL. 7.78
N332895.49	#3407546.05	SL. 7.64
N331941.88	#3407440.61	SL. 9.70
N330986.63	#3407972.77	SL. 9.18
N330667.27	#3408576.12	SL. 9.22

APPLIES TO SETTLEMENT PLATES 3,4,5,8,9,11 & 11A



SETTLEMENT PLATE DETAILS WITHIN MARSH CREATION  
(NOT TO SCALE)

NOTE:  
THE SETTLEMENT PLATE ELEVATION SHALL BE DETERMINED  
BEFORE PLACING DREDGE FILL AND AT END OF CONSTRUCTION.

CREATION AREA SETTLEMENT PLATES

AREA	SP-#	NORTHING	EASTING
NORTHERN	SP-3	337454	3487216
NORTHERN	SP-4	336519	3487167
NORTHERN	SP-5	335948	3486507
CENTRAL	SP-8	334758	3486490
CENTRAL	SP-9	334190	3487170
SOUTHERN	SP-11	332329	3487152
SOUTHERN	SP-11A	331095	3487719

MODIFICATION #2

"AS-BUILT"

REVISIONS			
NO.	DATE	APPROVED	TITLE
M2	07/07	R.F.	D.E.

SETTLEMENT PLATE DETAILS  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



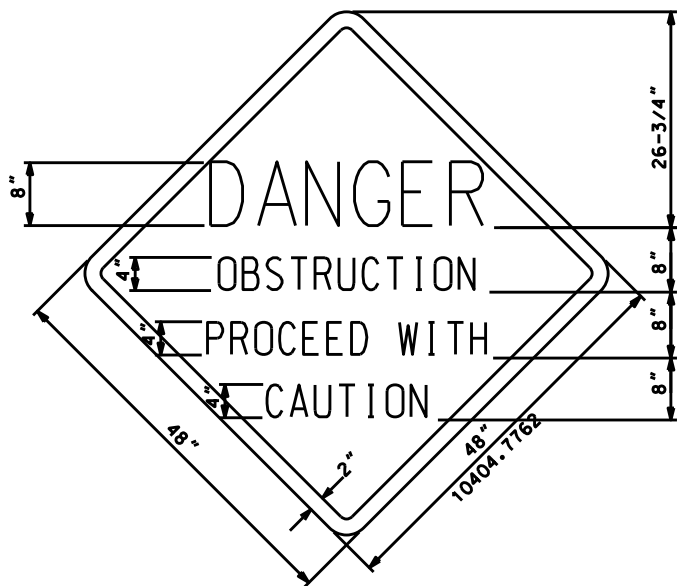
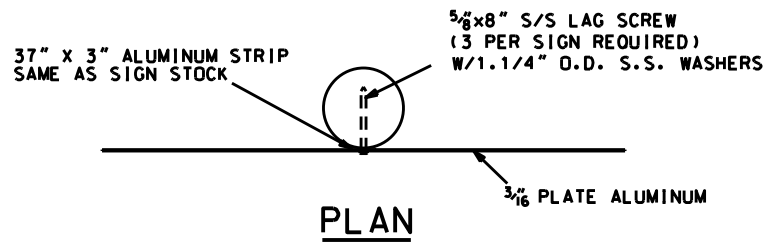
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LA-346

DRAWING NAME  
LA346044M2.dgn

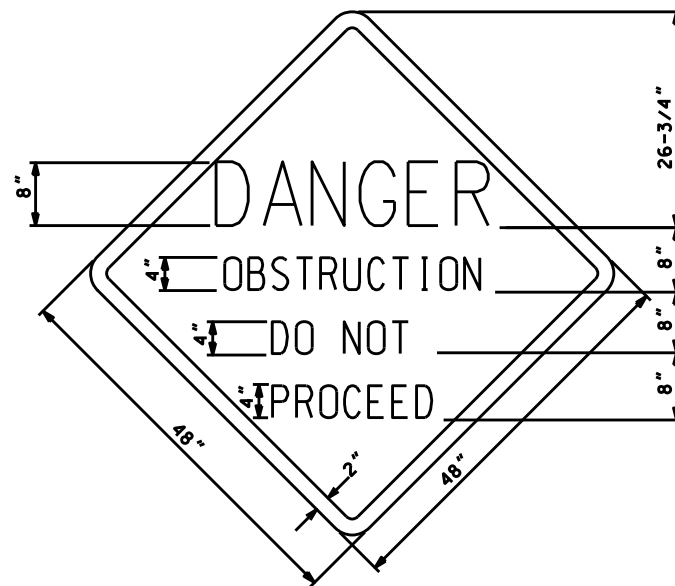
SHEET 44M2 of 65

DATE	01/05
DESIGNED	R. FAULKNER
DRAWN	A.J. GREMLION
CHECKED	B.A. STICKER
APPROVED	E.J. GERING III



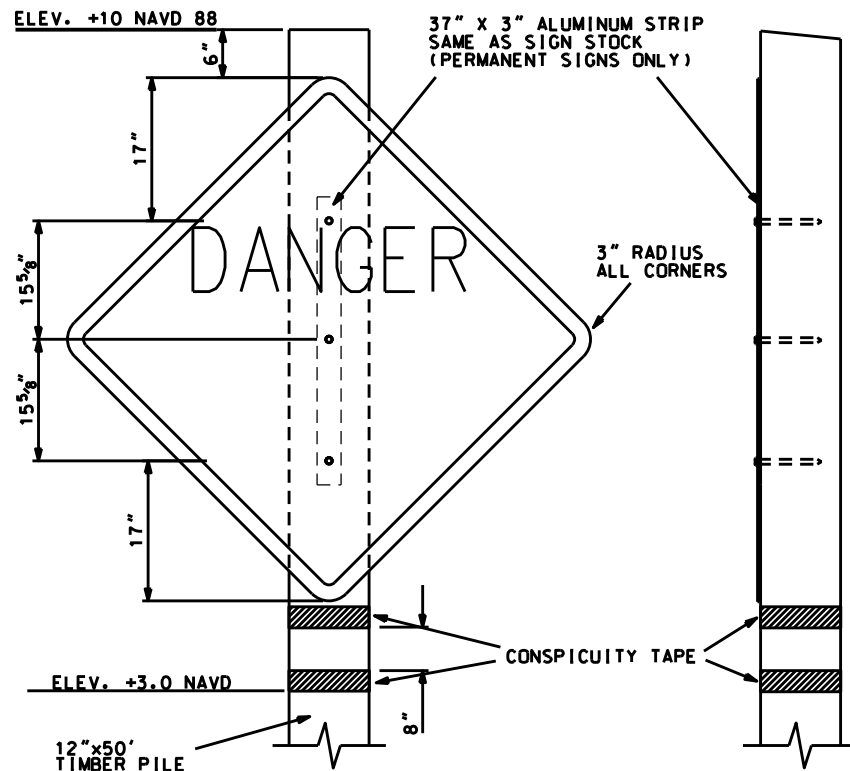


**PERMANENT SIGN**



**TEMPORARY SIGN**

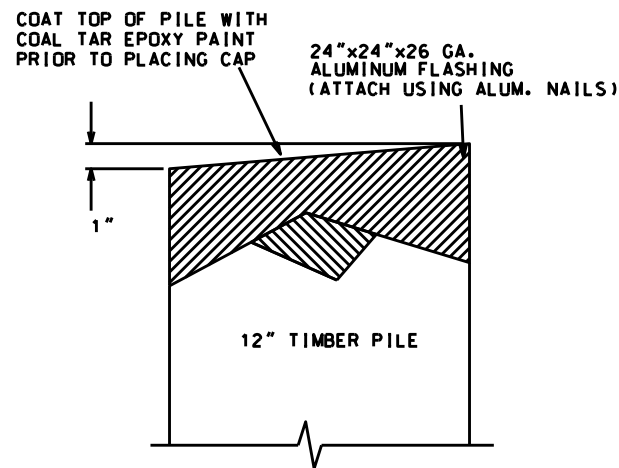
NOTE:  
1. ALL SIGNS WITH EXCEPTION OF THE SIGNS LOCATED AT THE CHOKEDOWN SECTION AND THE PIPELINE CROSSING SHALL BE TEMPORARY SIGNS WITH THE WORDING "DANGER-OBSTRUCTION-DO NOT PROCEED."  
2. THE 2" BORDER ON THE WARNING SIGN SHALL BE A REFLECTIVE MATERIAL OF ORANGE COLOR. THE LETTERING FIELD SHALL BE A RETRO-REFLECTIVE MATERIAL OF WHITE COLOR. THE LETTERING FOR THE WARNING SIGNS SHALL BE BLACK. WARNING SIGNS SHALL BE PLACED ON TWO SIDES WITH THE SIGN FACING PERPENDICULAR TO THE SHORELINE AS CONCURRED IN BY THE COTR.  
3. TEMPORARY WARNING SIGNS SHALL BE PLACED AS SHOWN IN PLAN. MAXIMUM DISTANCE 500' APART.



**ELEVATION**

**SIDE**

**PERMANENT WARNING SIGN DETAILS**



**TYPICAL TIMBER PILE CAP  
(NOT TO SCALE)**

**"AS-BUILT"**

REVISIONS		
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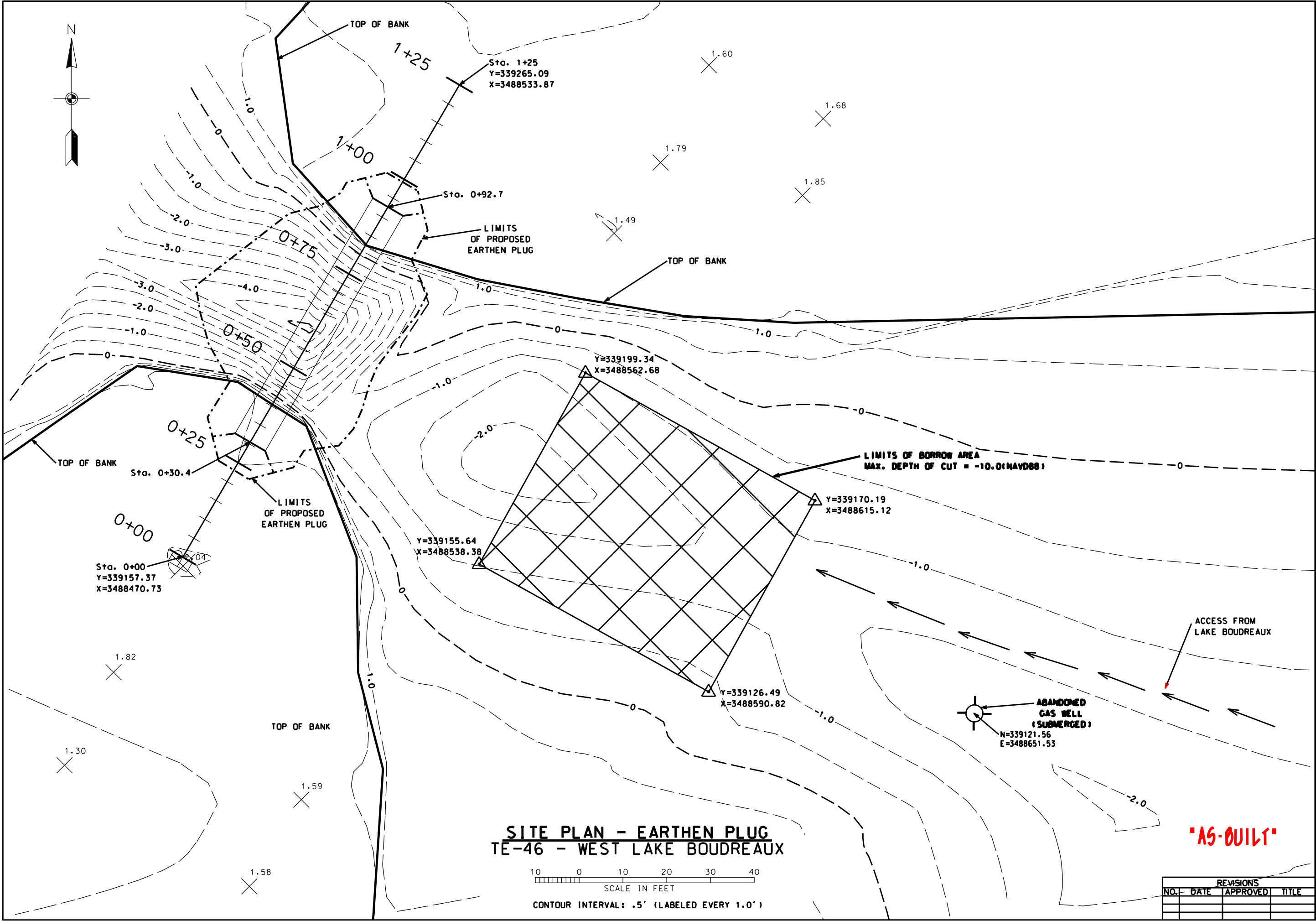
Date	
Designed	01/05
Drawn	01/05
Checked	06/06
Approved	12/06

WARNING SIGN DETAILS  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LA.



File Name	LA346
Drawing Name	LA346045
Sheet 45 of 65	






**SITE PLAN - EARTHEN PLUG  
TE-46 - WEST LAKE BOUDREAU**



CONTOUR INTERVAL: .5' (LABELED EVERY 1.0')

**"AS-BUILT"**

REVISIONS			
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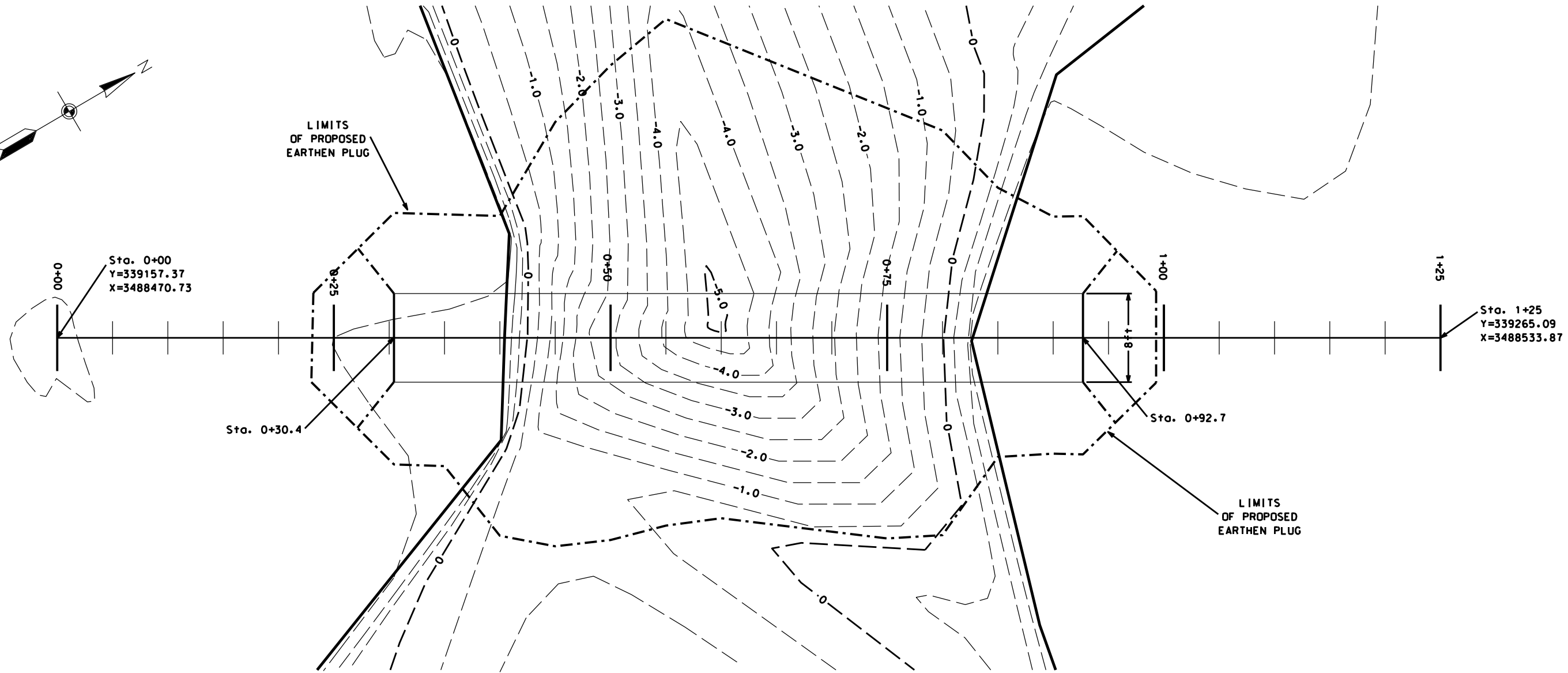
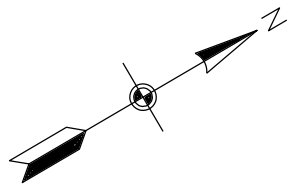
**SITE PLAN- EARTHEN PLUG  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA**

File Name  
LA-346

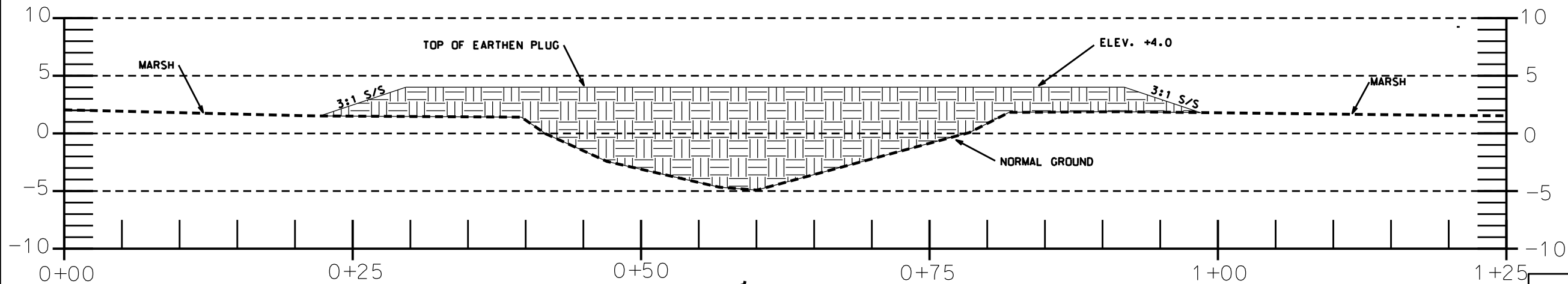
Drawing Name  
LA346046.dgn

Sheet 46 of 65

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Drawn	A.J.J. GREMILLION
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Approved	E.J.J. GIERING III



**PLAN - EARTHEN PLUG**  
**TE-46 - WEST LAKE BOUDREAUX**



**PROFILE ON C - EARTHEN PLUG**  
**TE-46 - WEST LAKE BOUDREAU**

**"AS-BUILT"**

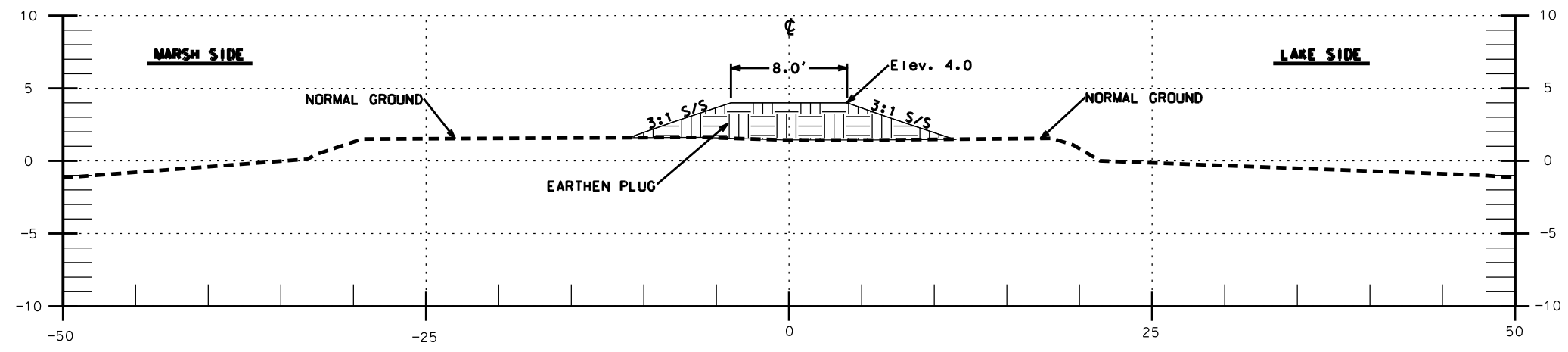
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**PLAN & PROFILE-EARTHEN PLUG.**  
**TE-46 - WEST LAKE BOUDREAUX**  
**CONSTRUCTION UNIT NO. 1**  
**TERREBONNE PARISH, LOUISIANA**

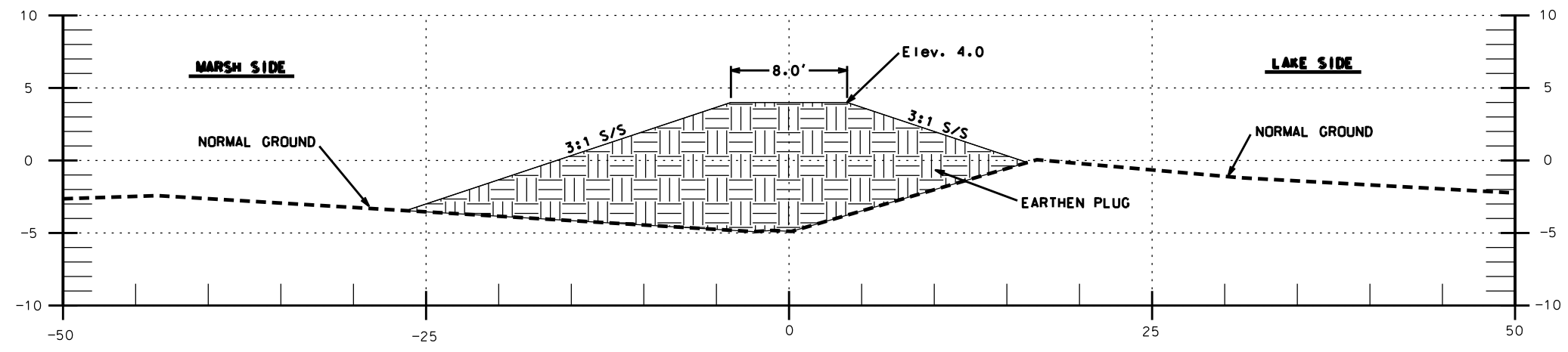


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LA-346  
Drawing Name  
LA346047.dgn  
Sheet 47 of 65

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Checked	B.A. STICKER
Approved	E.J. GIERING III



**TYPICAL SECTION - OUTSIDE OF CHANNEL**  
**EARTHEN PLUG**



**TYPICAL SECTION - WITHIN CHANNEL**  
**EARTHEN PLUG**

**"AS-BUILT"**

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LA-346

Drawing Name  
LA346048.dgn

Sheet 48 of 65

**CROSS SECTIONS-EARTHEN PLUG.**

**TE-46 - WEST LAKE BOUDREAU**

**CONSTRUCTION UNIT NO. 1**

**TERREBONNE PARISH, LOUISIANA**

Designed  
**R. FAULKNER**

Drawn  
**A.J.J. GREMILLION**

Checked  
**B.A. STICKER**

Approved  
**E.J.J. GIERING III**

Date  
**01/05**

Date  
**01/05**

Date  
**06/06**

Date  
**12/06**

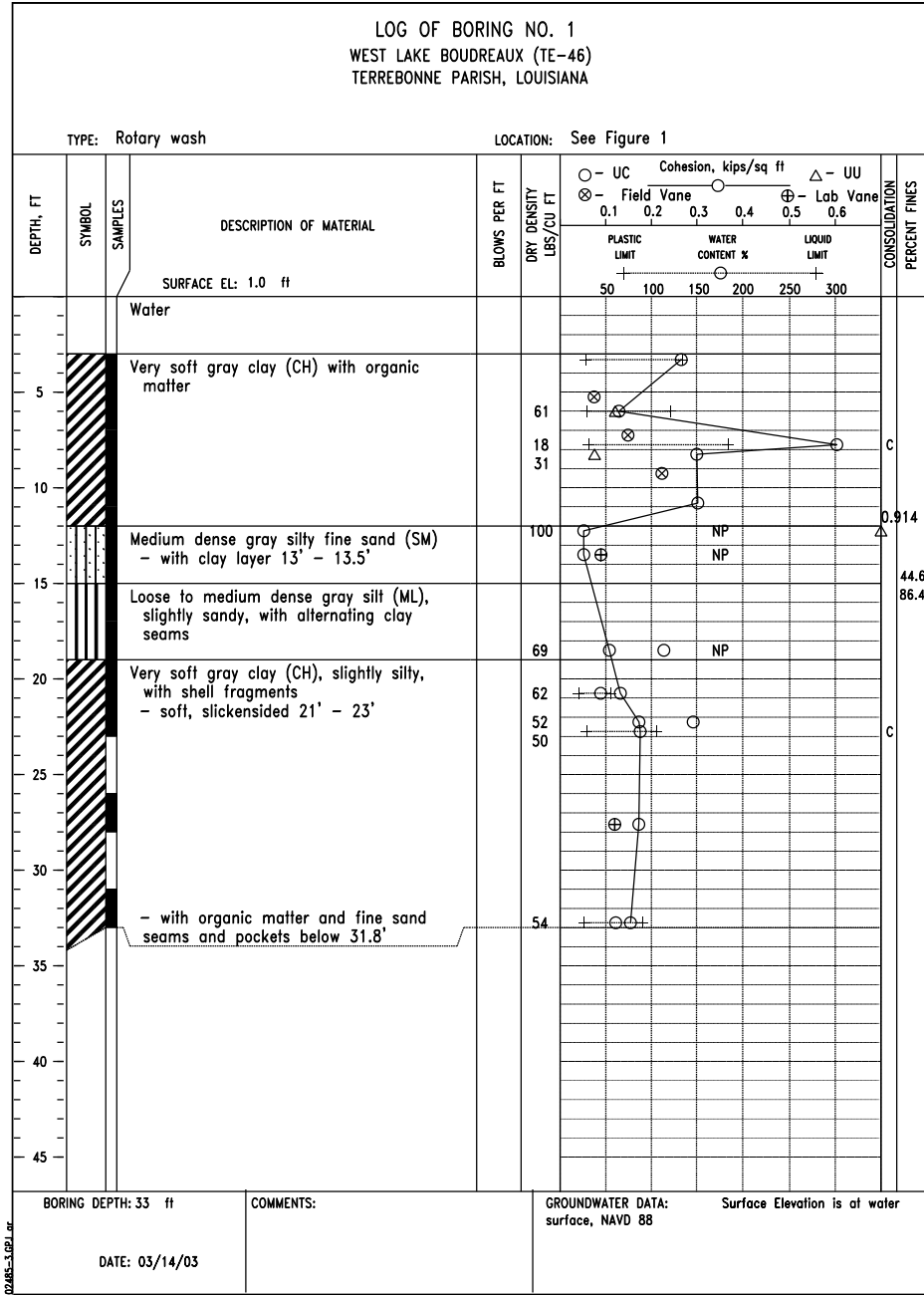


FIGURE A-1

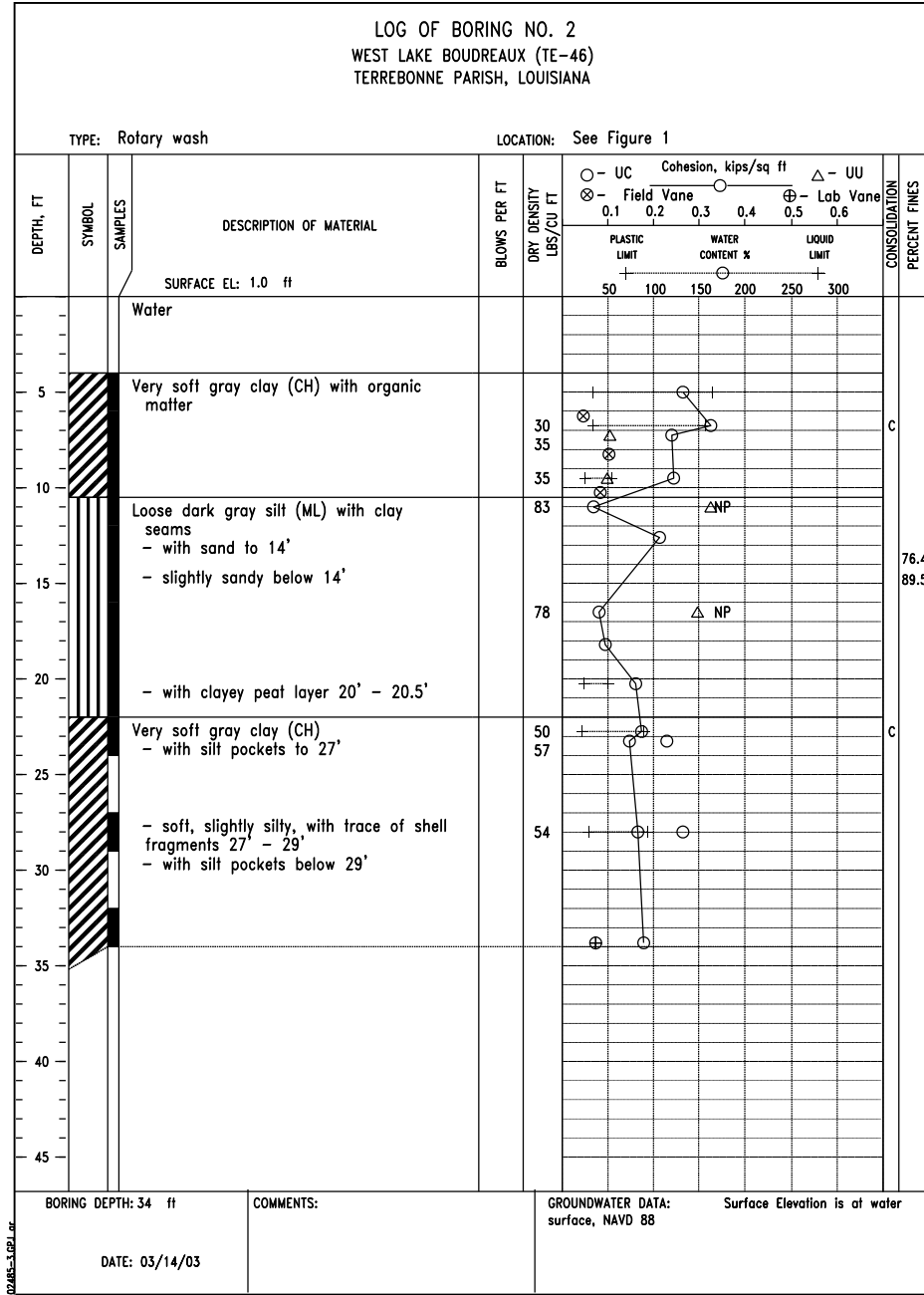


FIGURE A-2

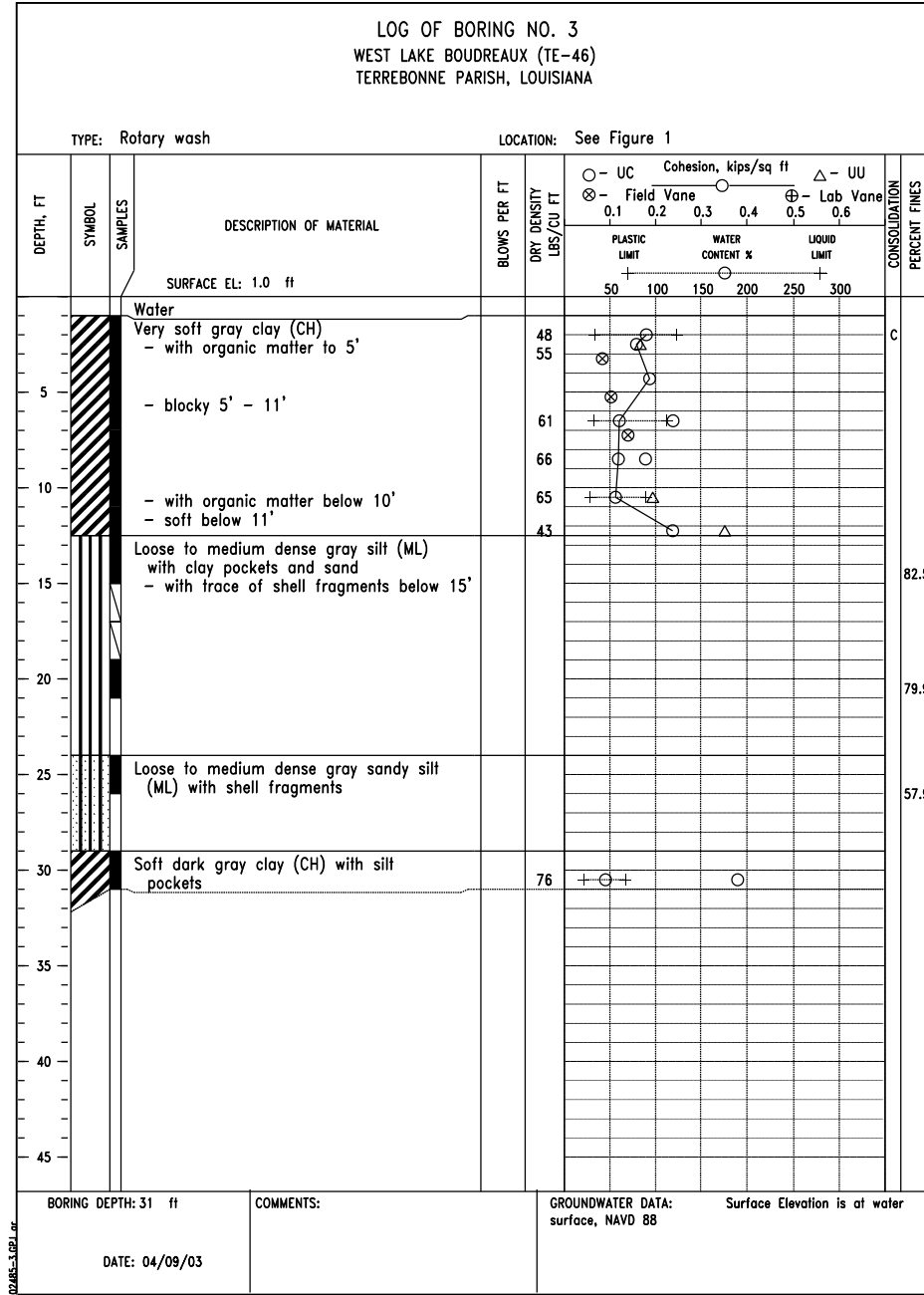


FIGURE A-3

SOIL BORING LOGS: 1, 2 & 3  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



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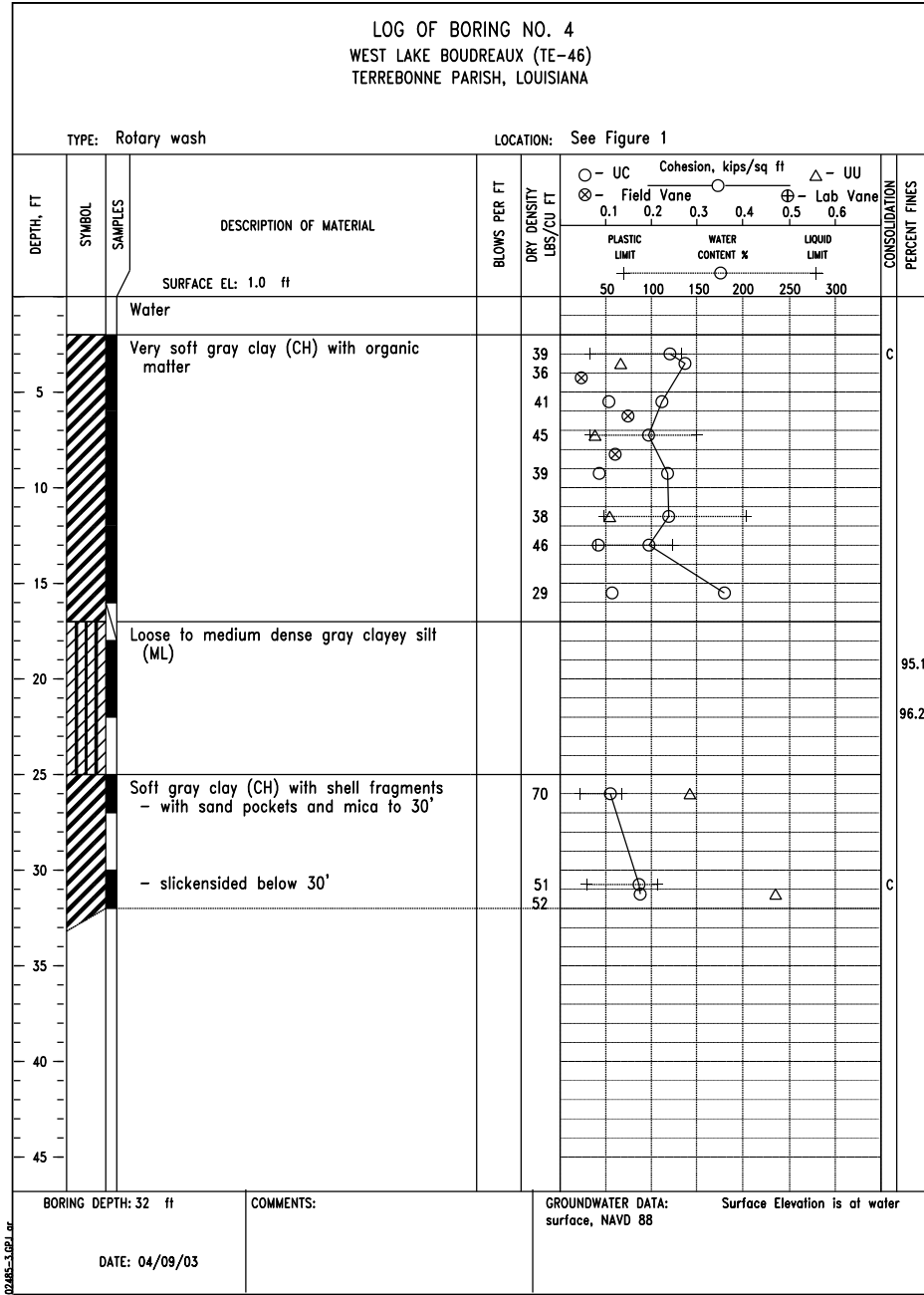


FIGURE A-4

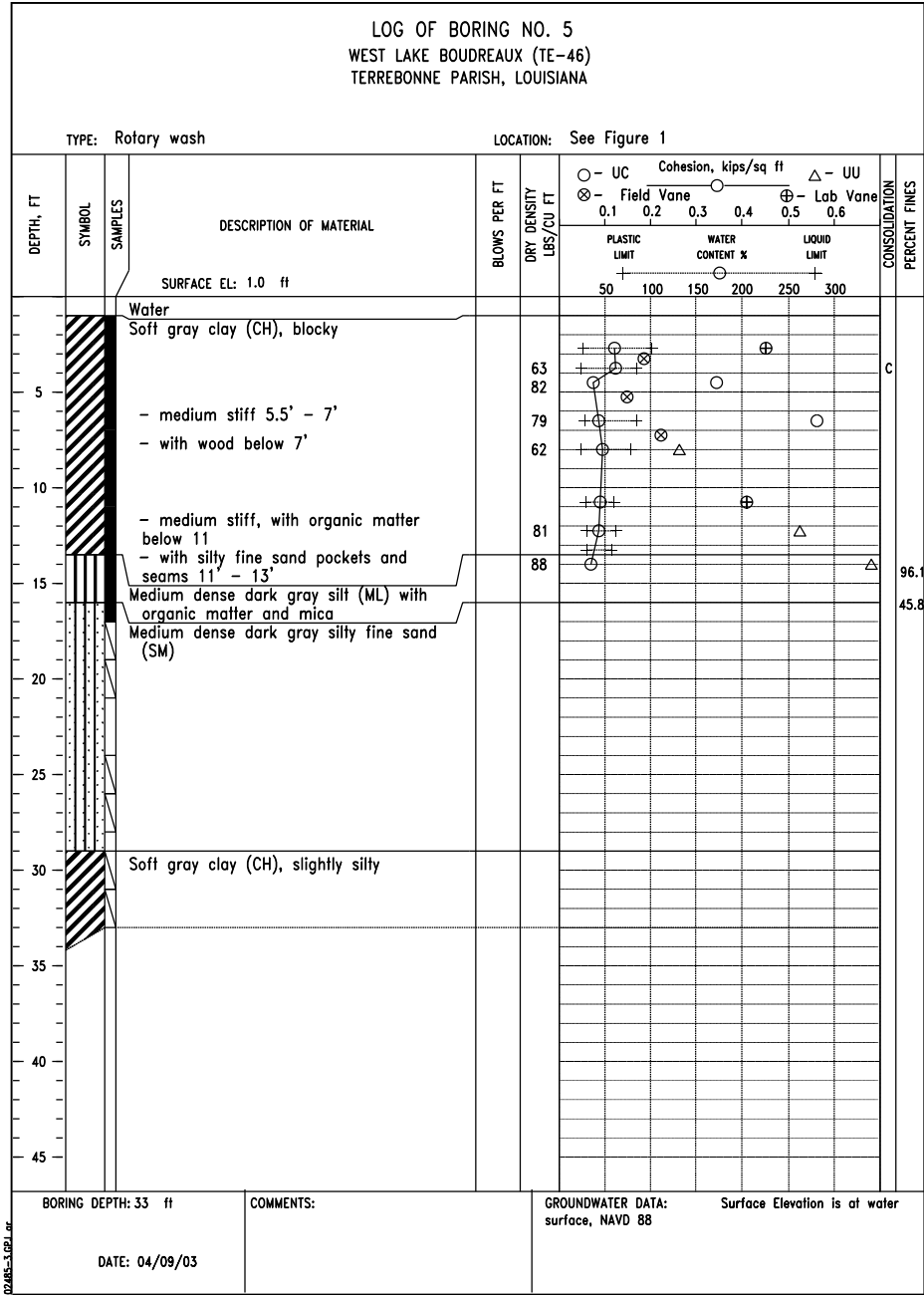


FIGURE A-5

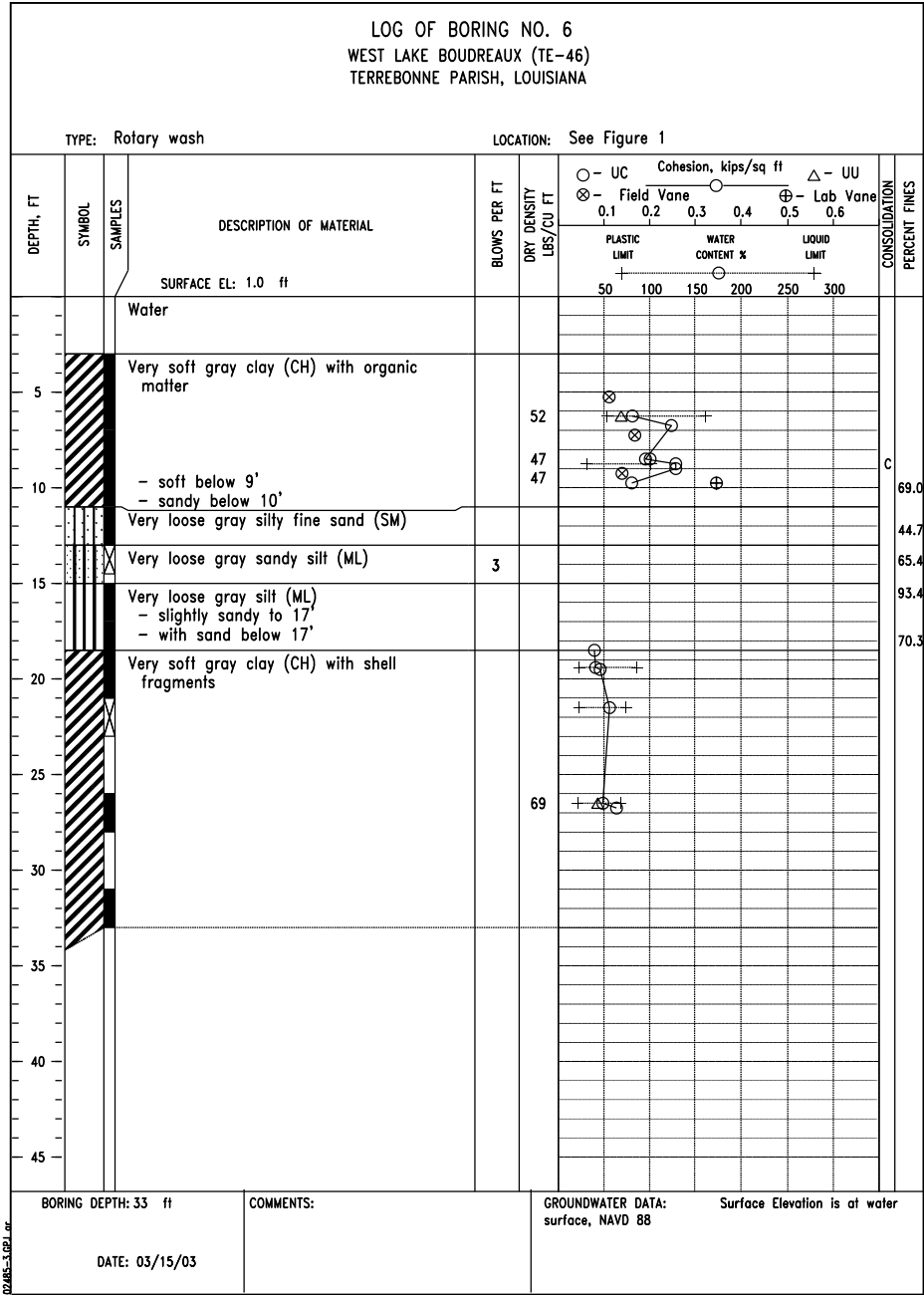


FIGURE A-6

SOIL BORING LOGS: 4, 5 & 6  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

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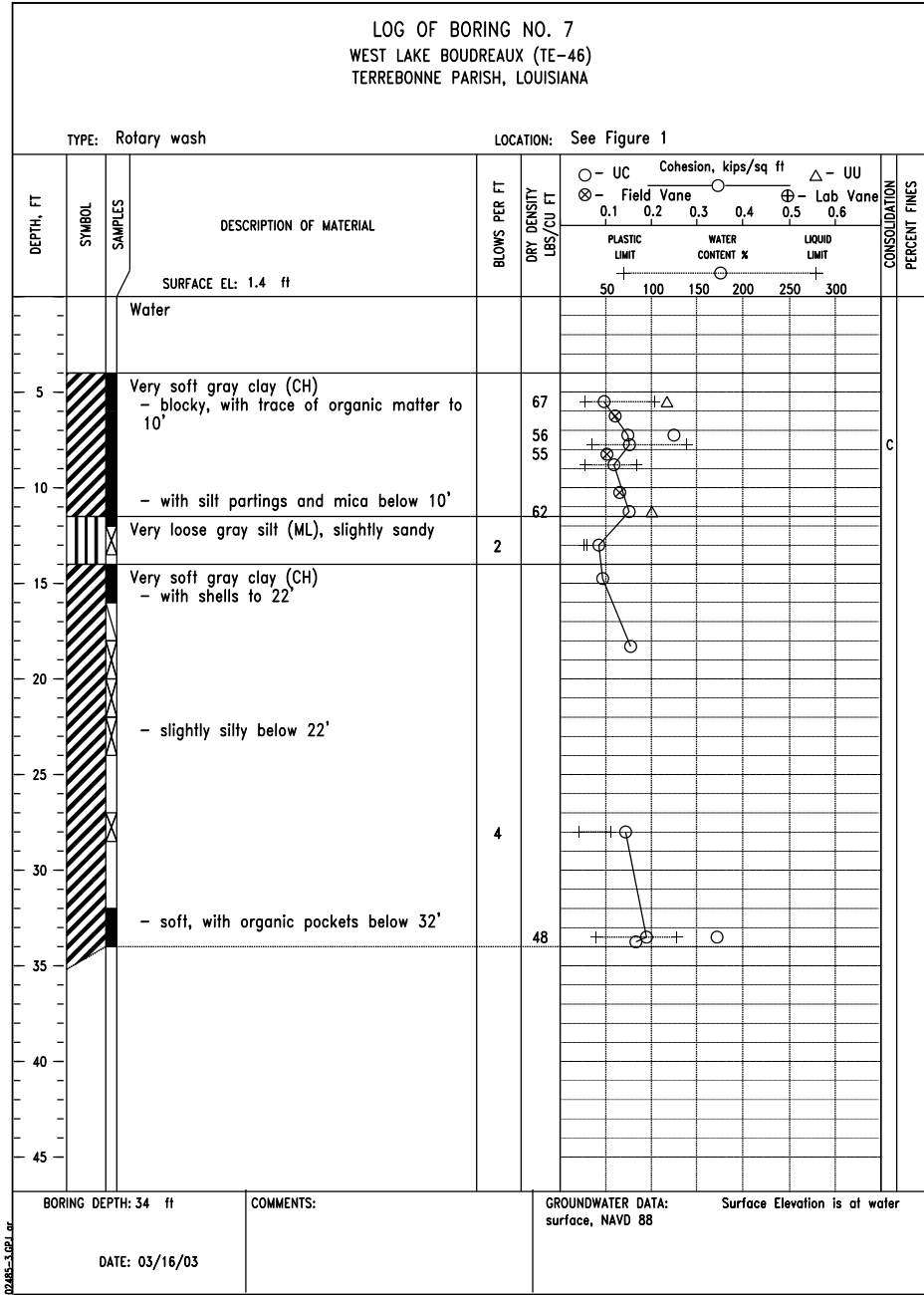


FIGURE A-7

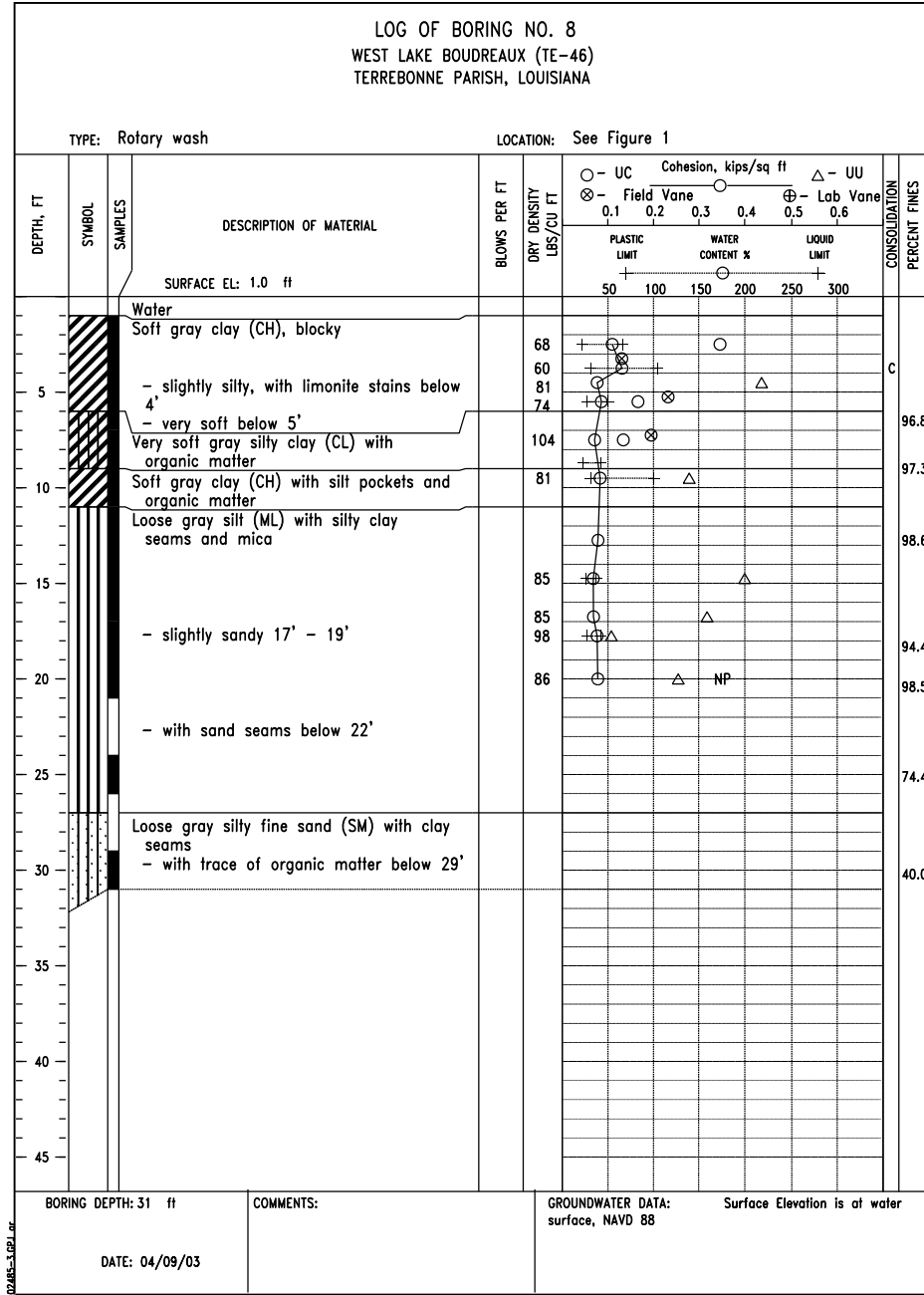


FIGURE A-8

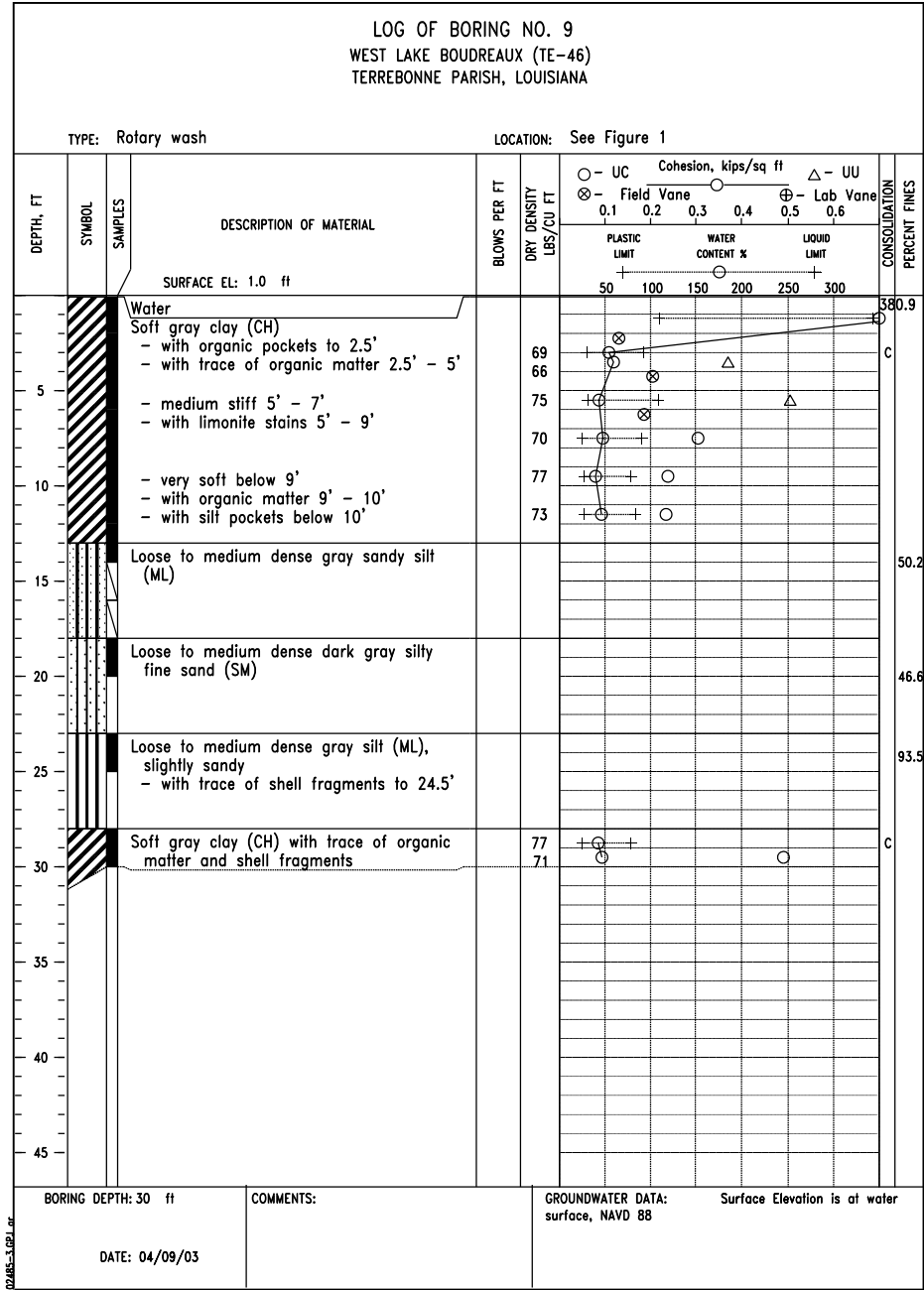


FIGURE A-9

SOIL BORING LOGS: 7, 8 & 9  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



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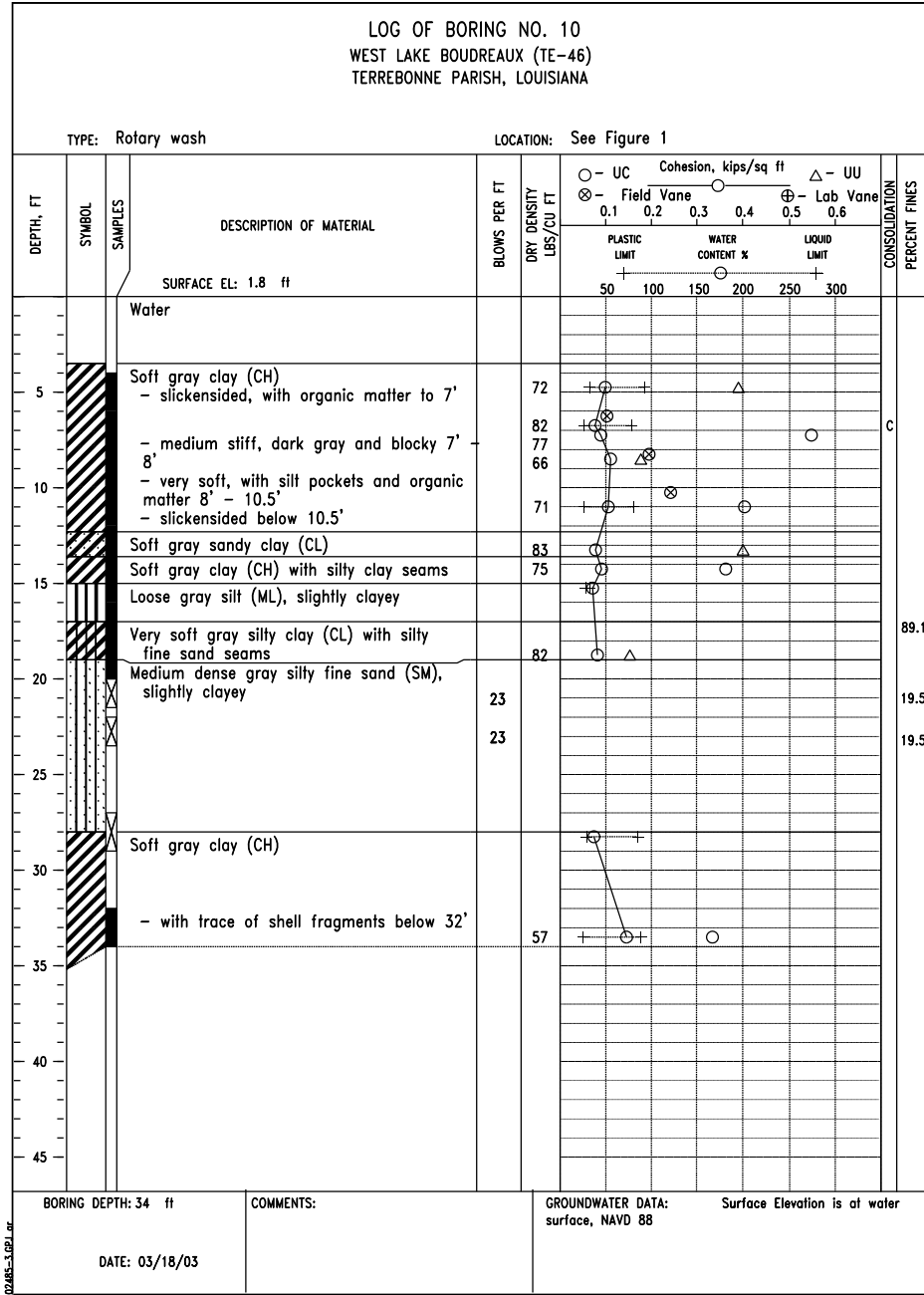


FIGURE A-10

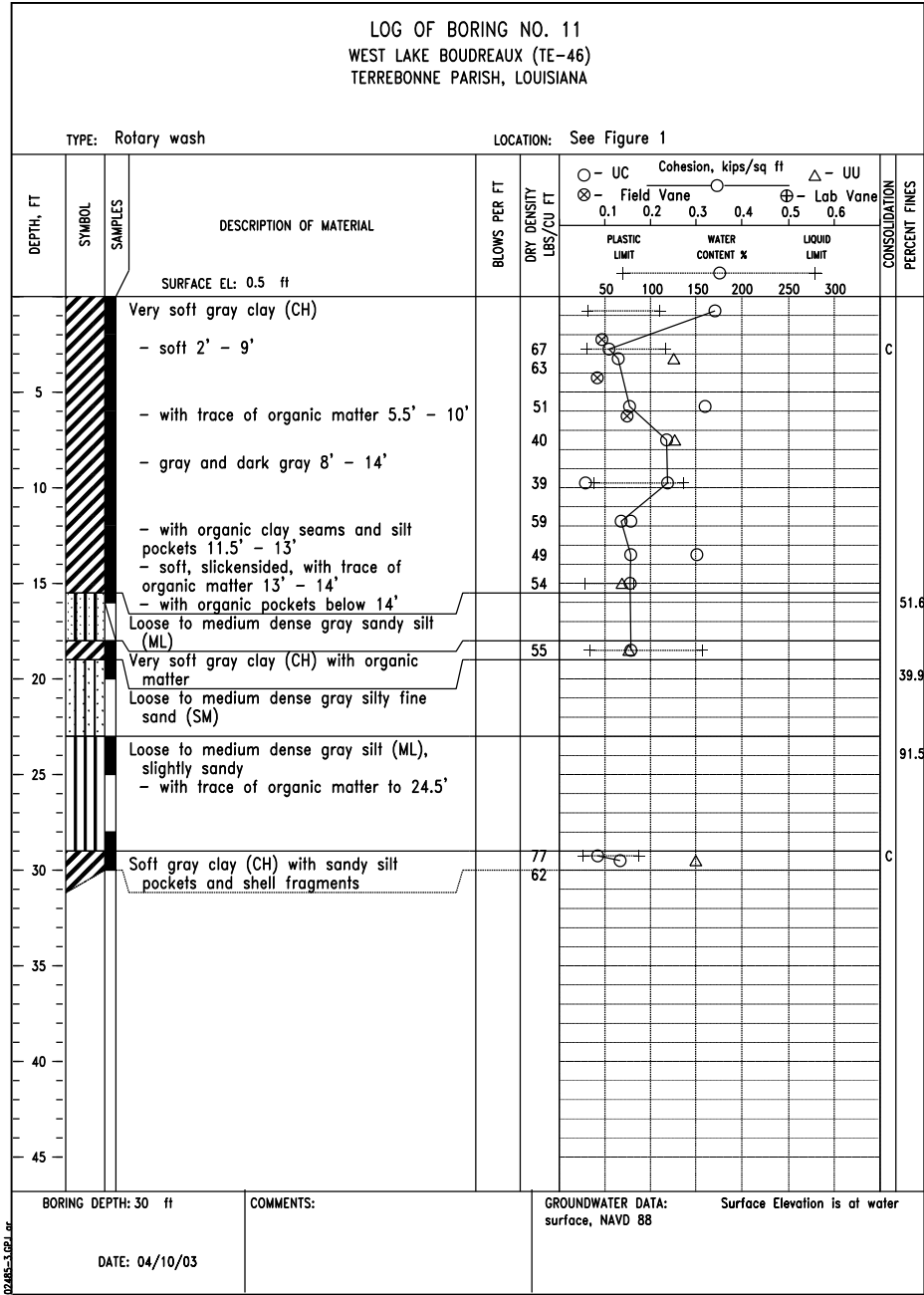


FIGURE A-11

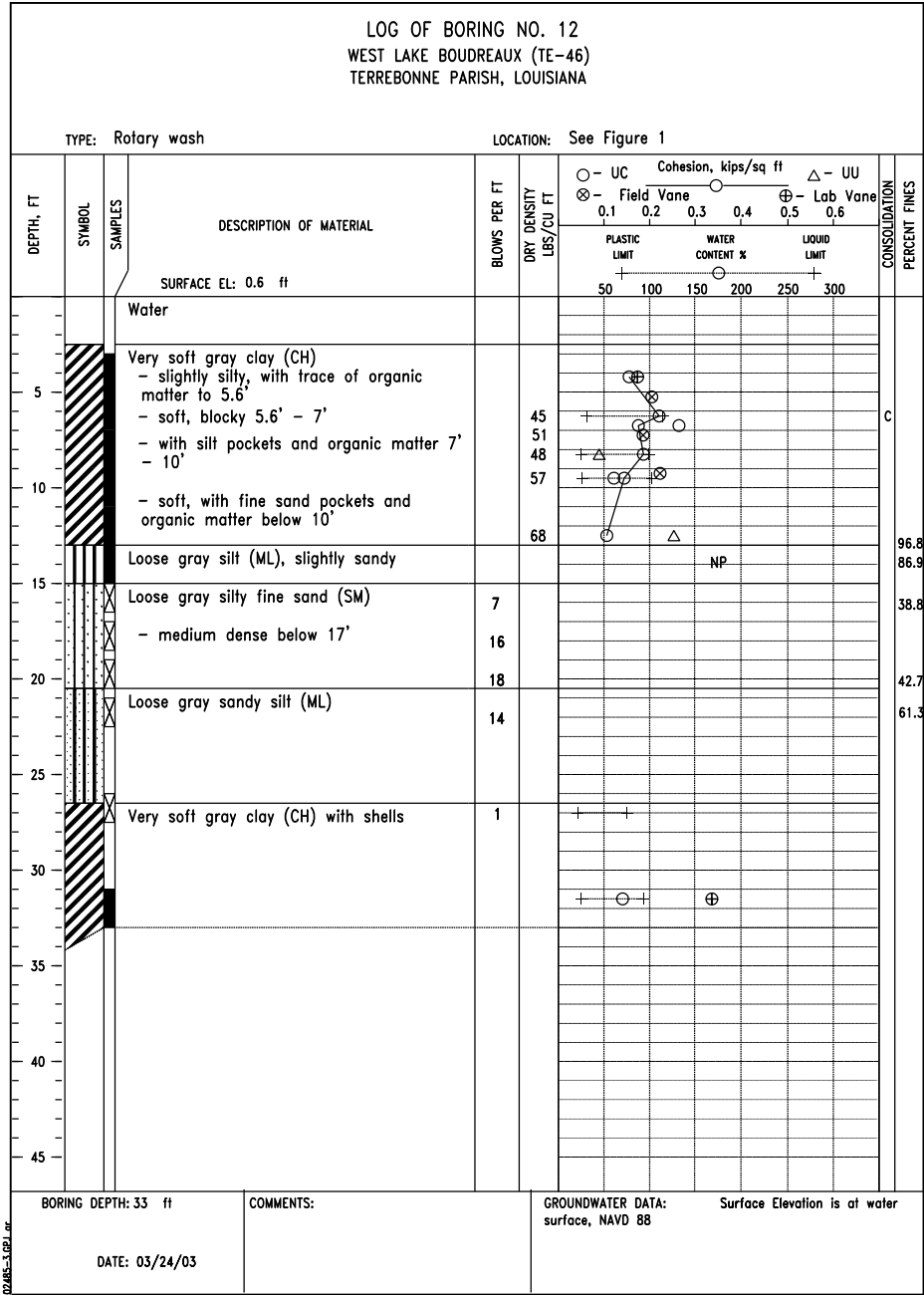


FIGURE A-12

SOIL BORING LOGS: 10, 11 & 12  
TE-46 - WEST LAKE BOUDREAU  
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TERREBONNE PARISH, LOUISIANA

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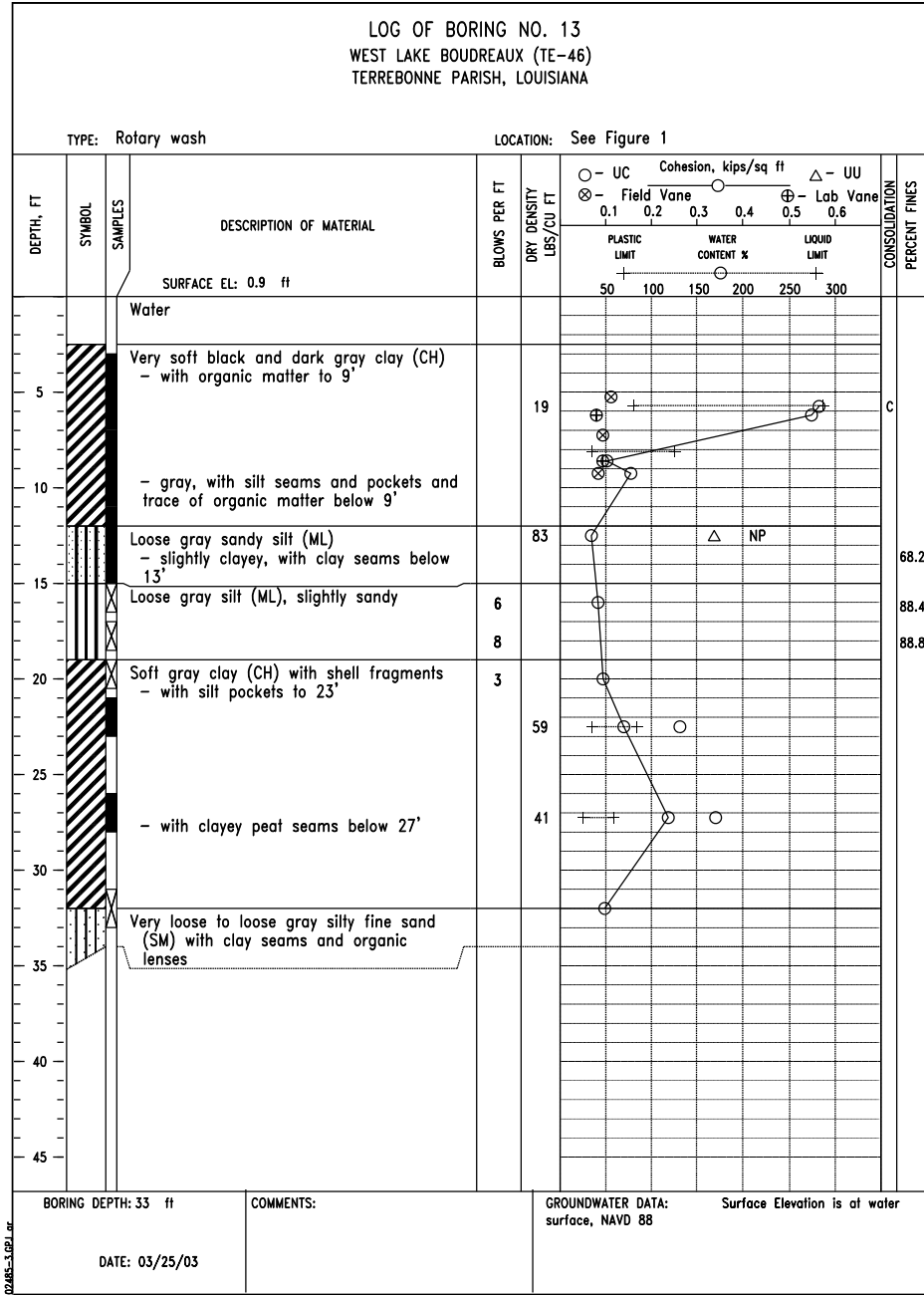


FIGURE A-13

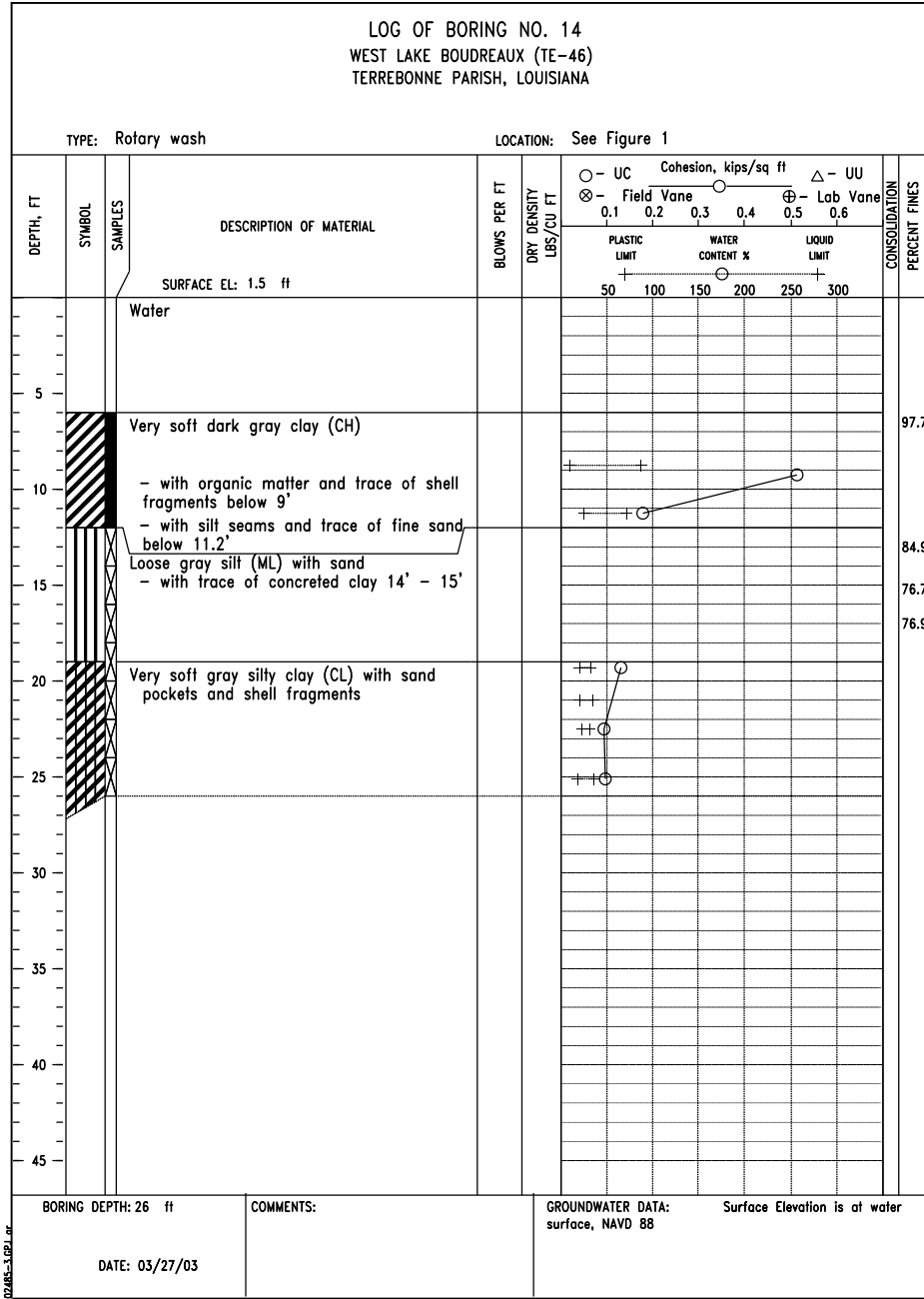


FIGURE A-14

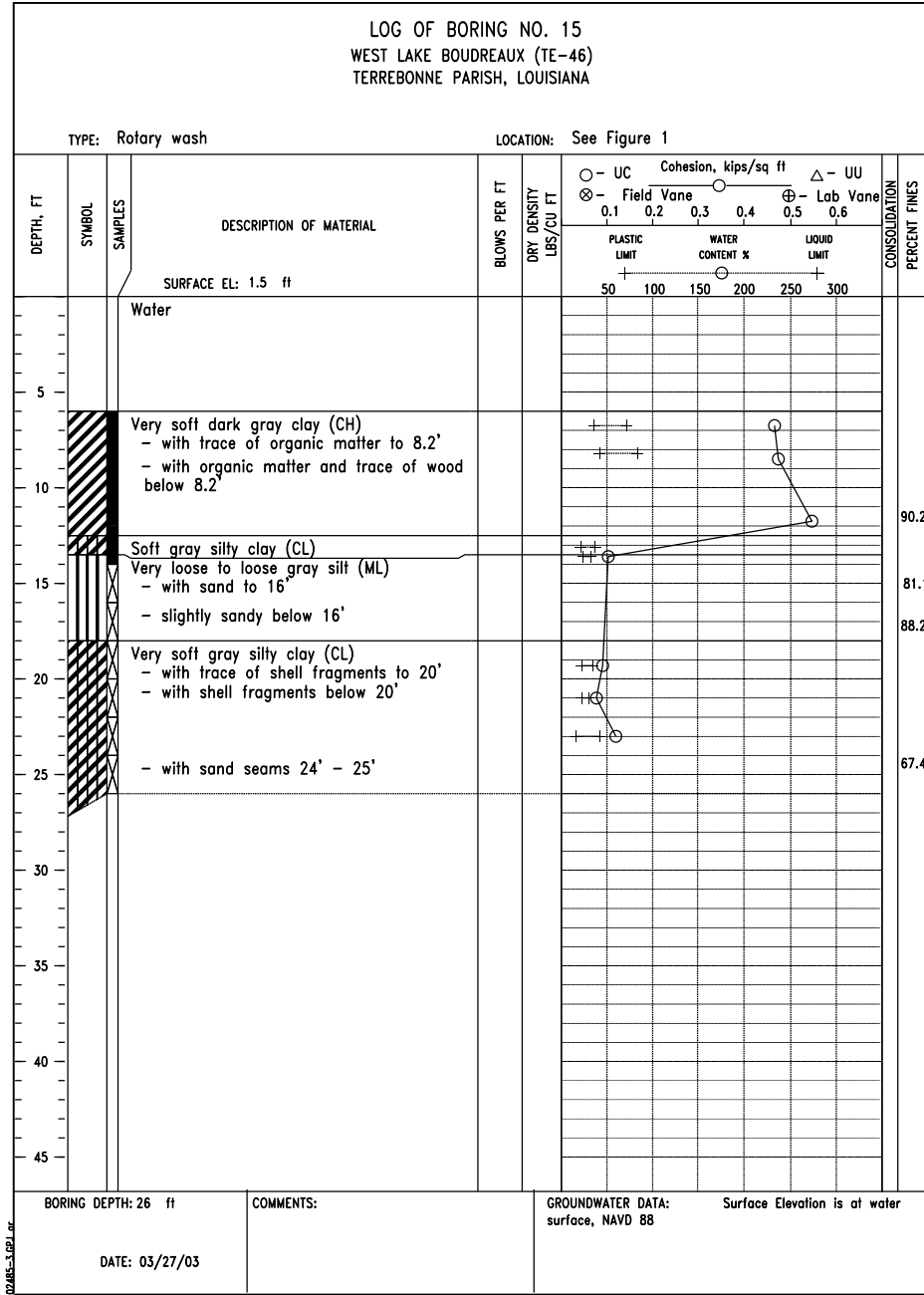


FIGURE A-15

"AS-BUILT"

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01/05				
06/06				
12/06				

SOIL BORING LOGS: 13, 14 & 15  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

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NO.	DATE	APPROVED	TITLE

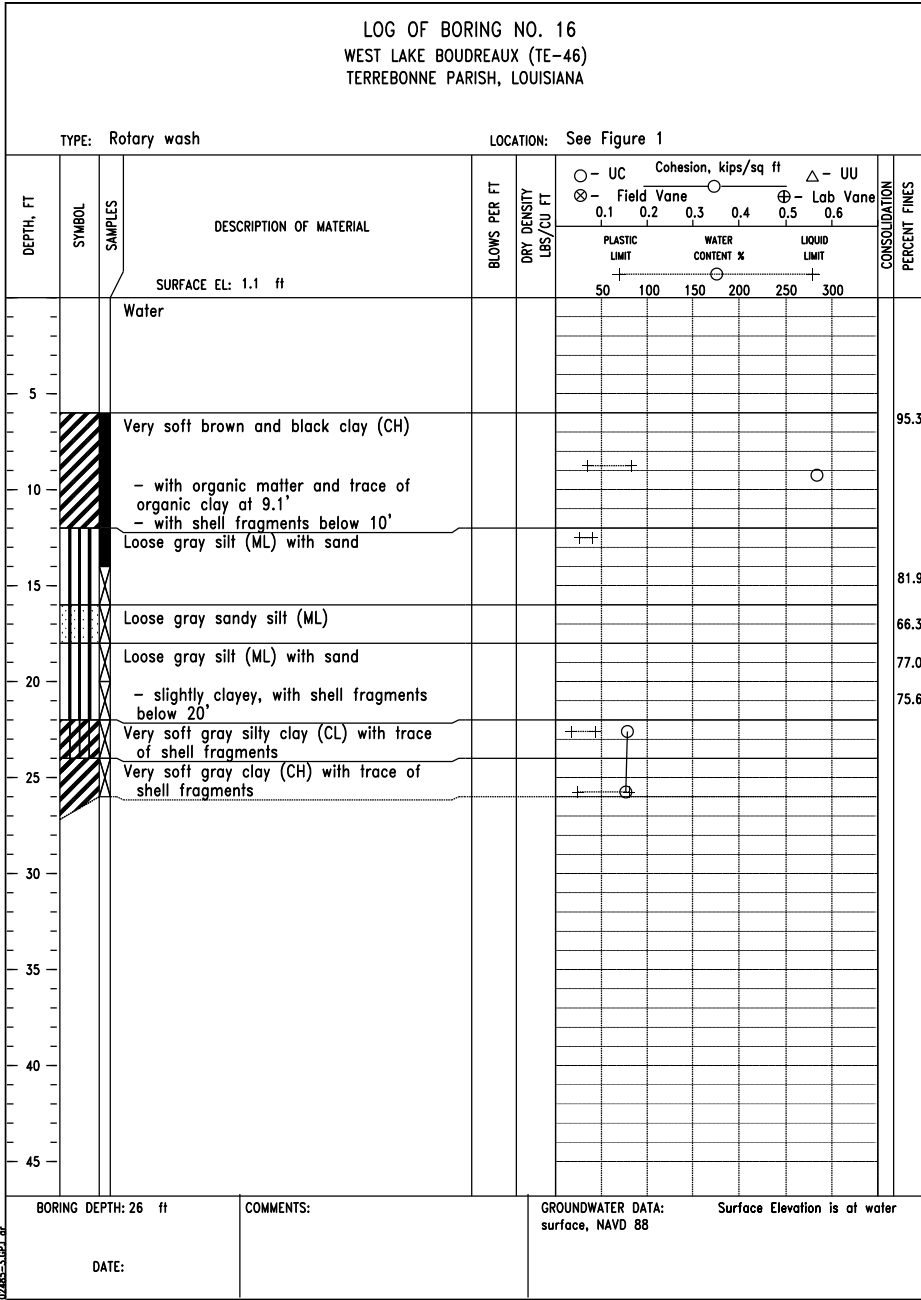


FIGURE A-16

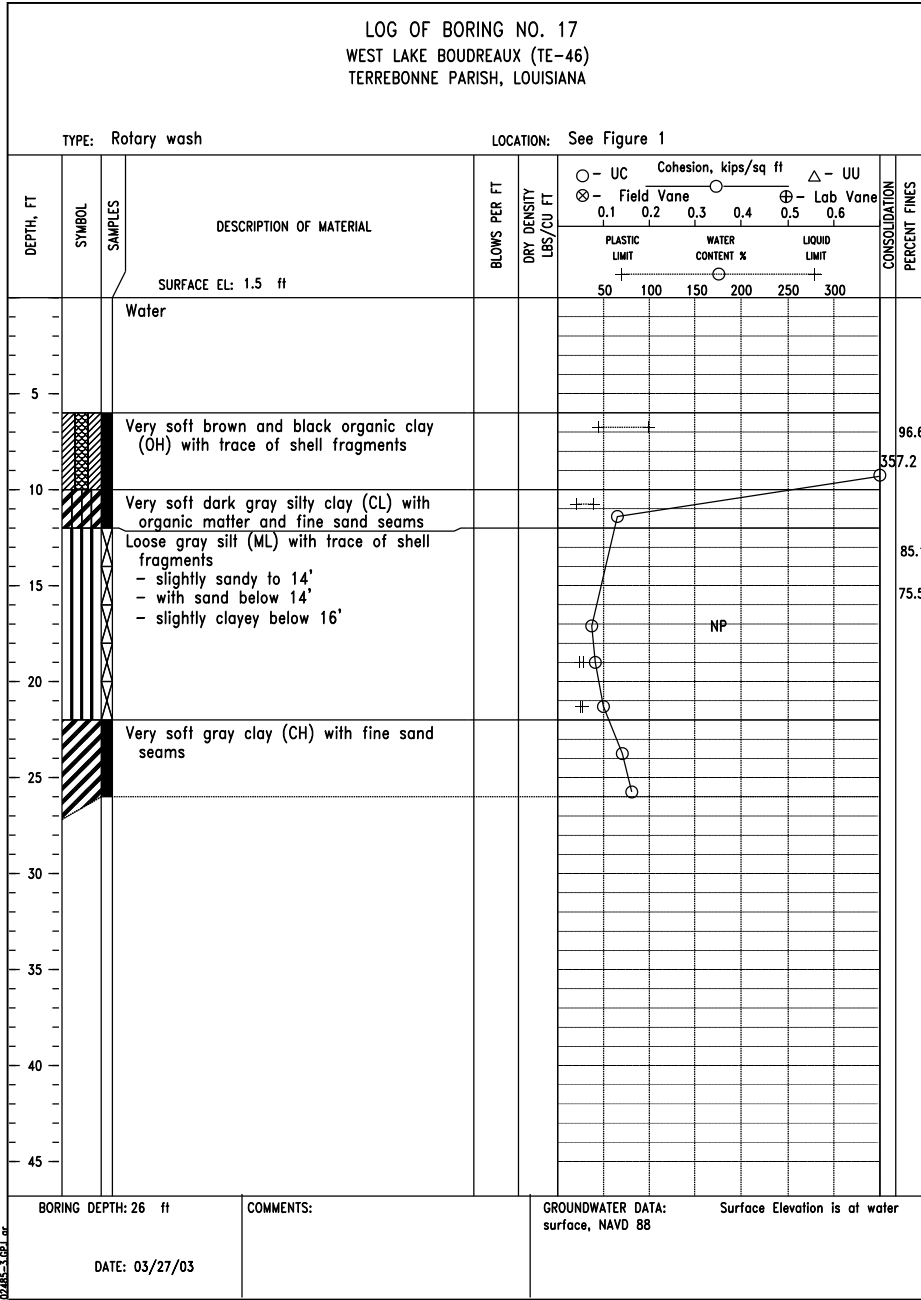


FIGURE A-17

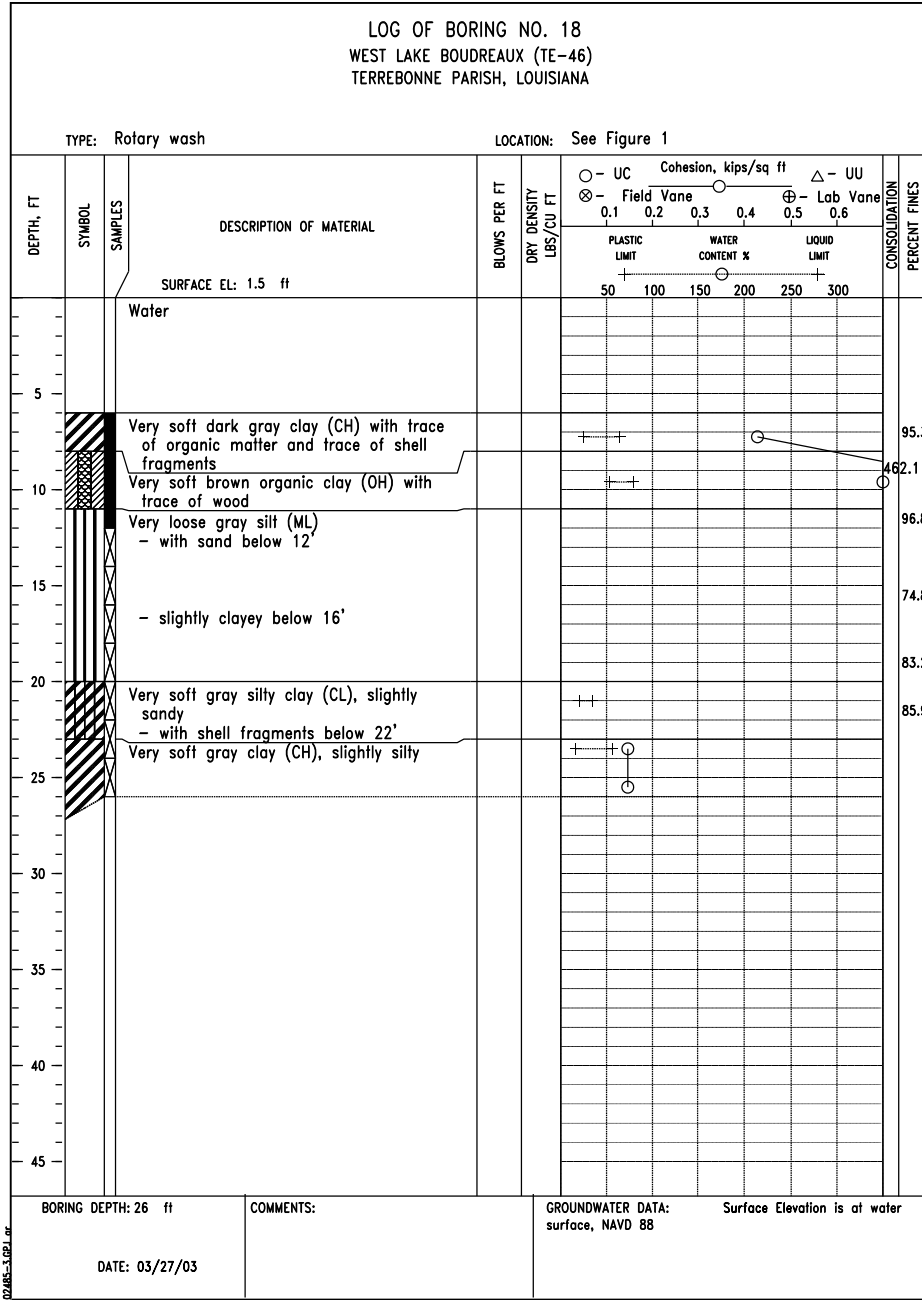


FIGURE A-18

AS-BUILT

DATE  
01/05  
01/05  
06/06  
12/06

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A.J. GREMILLION  
B.A. STICKER  
E.J. GERING III

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CHECKED  
APPROVED

SOIL BORING LOGS: 16, 17 & 18  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

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DATE

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TITLE

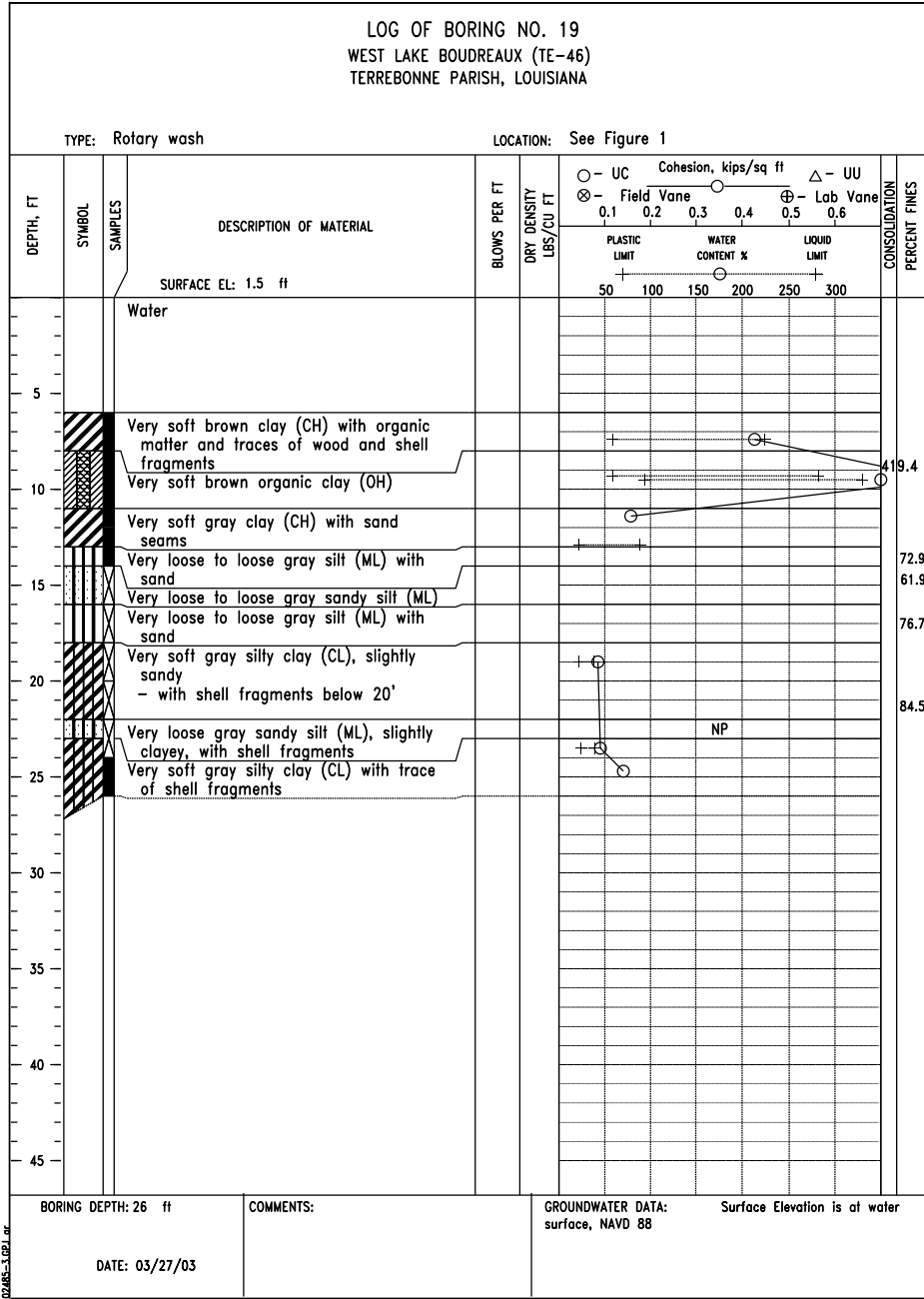


FIGURE A-19

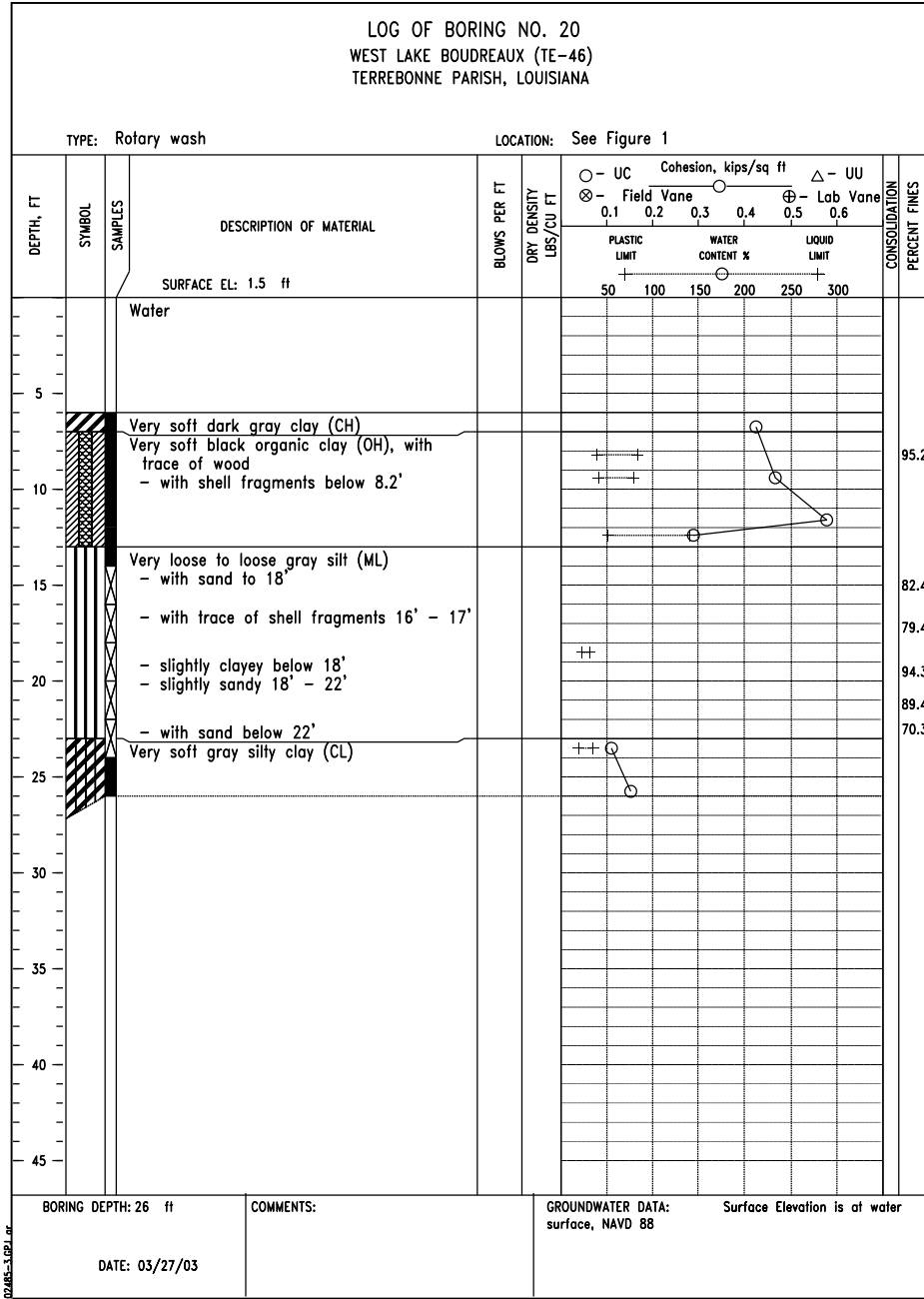


FIGURE A-20

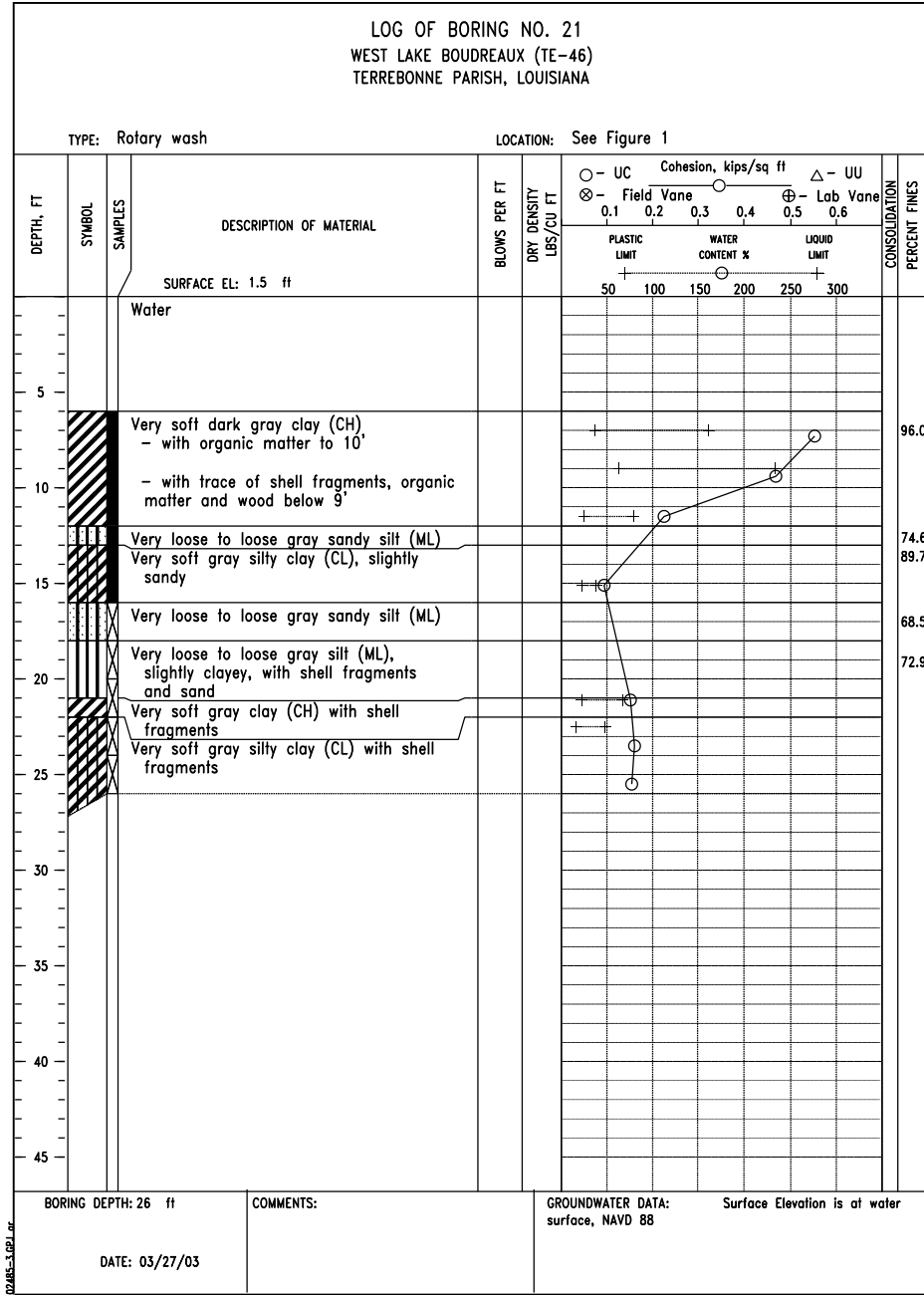


FIGURE A-21

SOIL BORING LOGS: 19, 20 & 21  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



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'AS-BUILT'



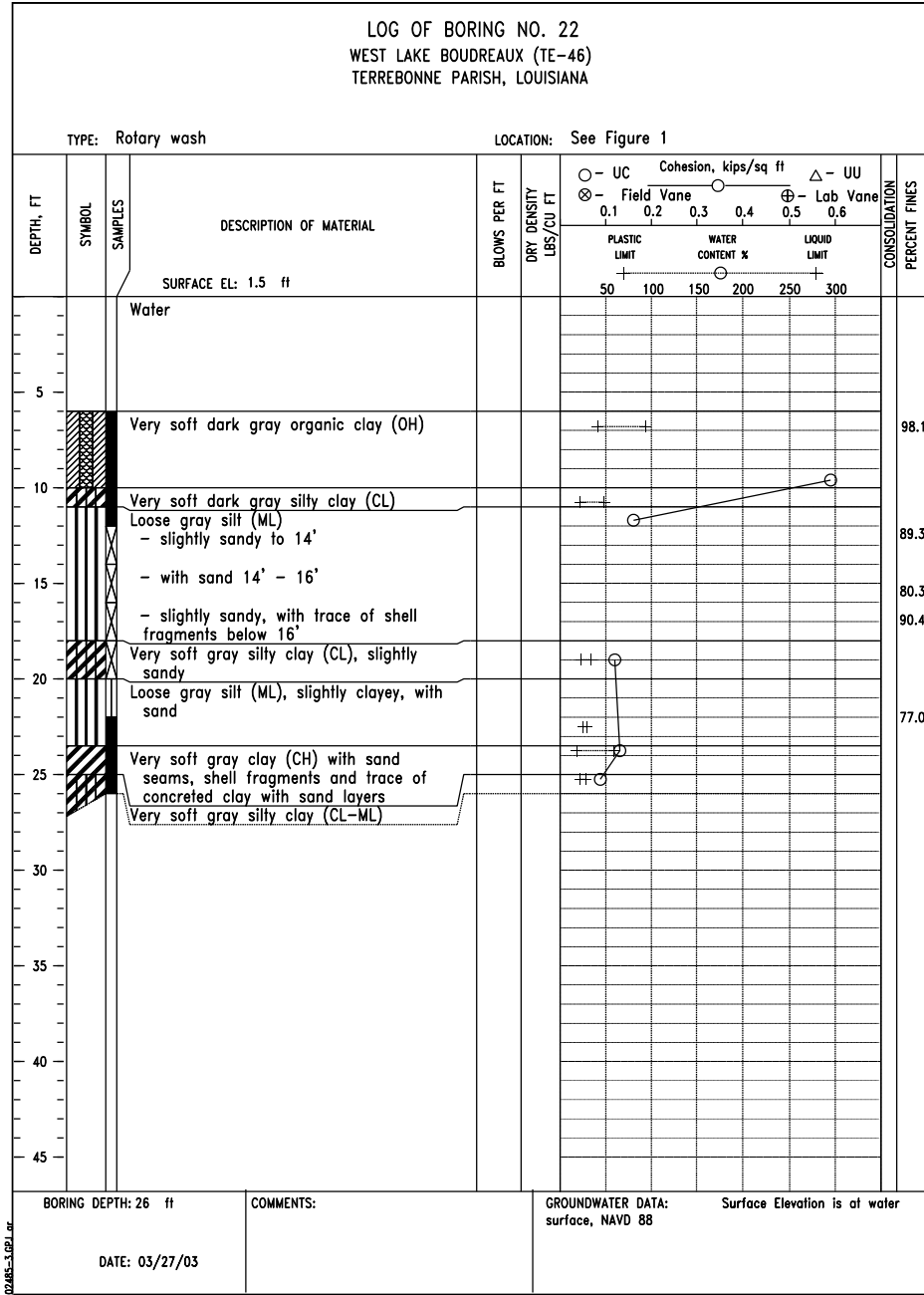


FIGURE A-22

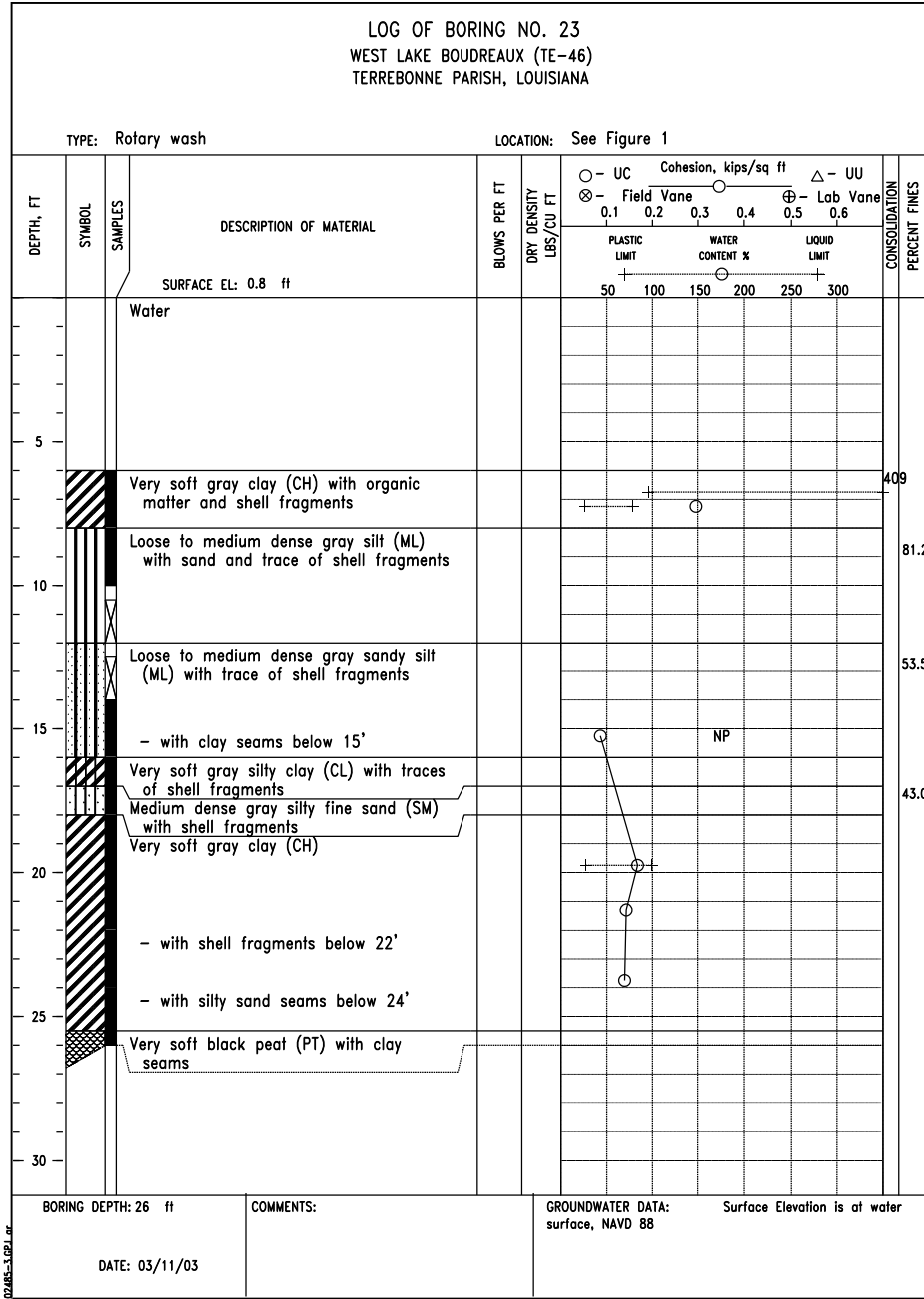


FIGURE A-23

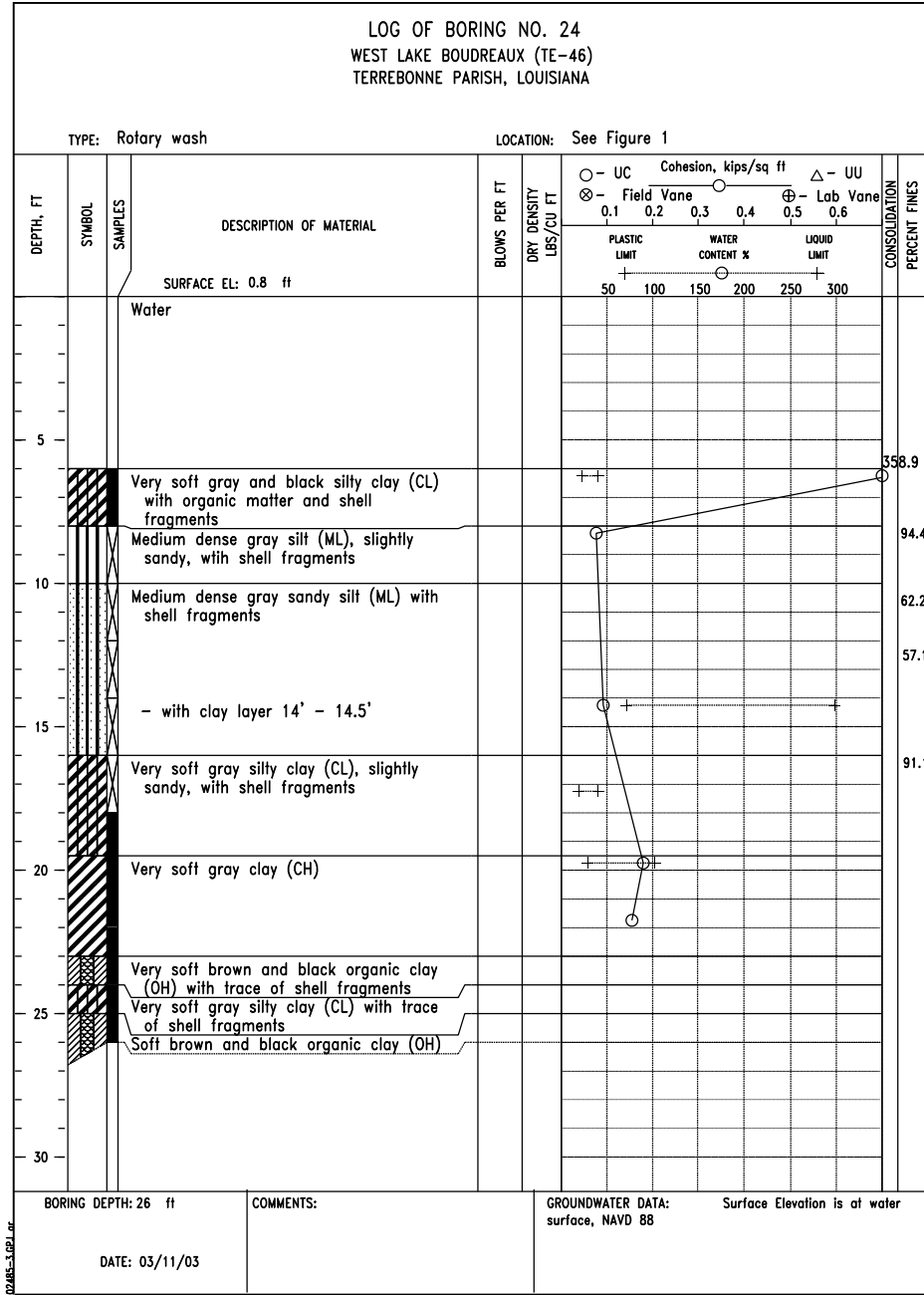


FIGURE A-24

SOIL BORING LOGS: 22, 23 & 24  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



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CHECKED	B.A. STICKER	DATE	06/06
APPROVED	E.J. GIERING III	DATE	12/06

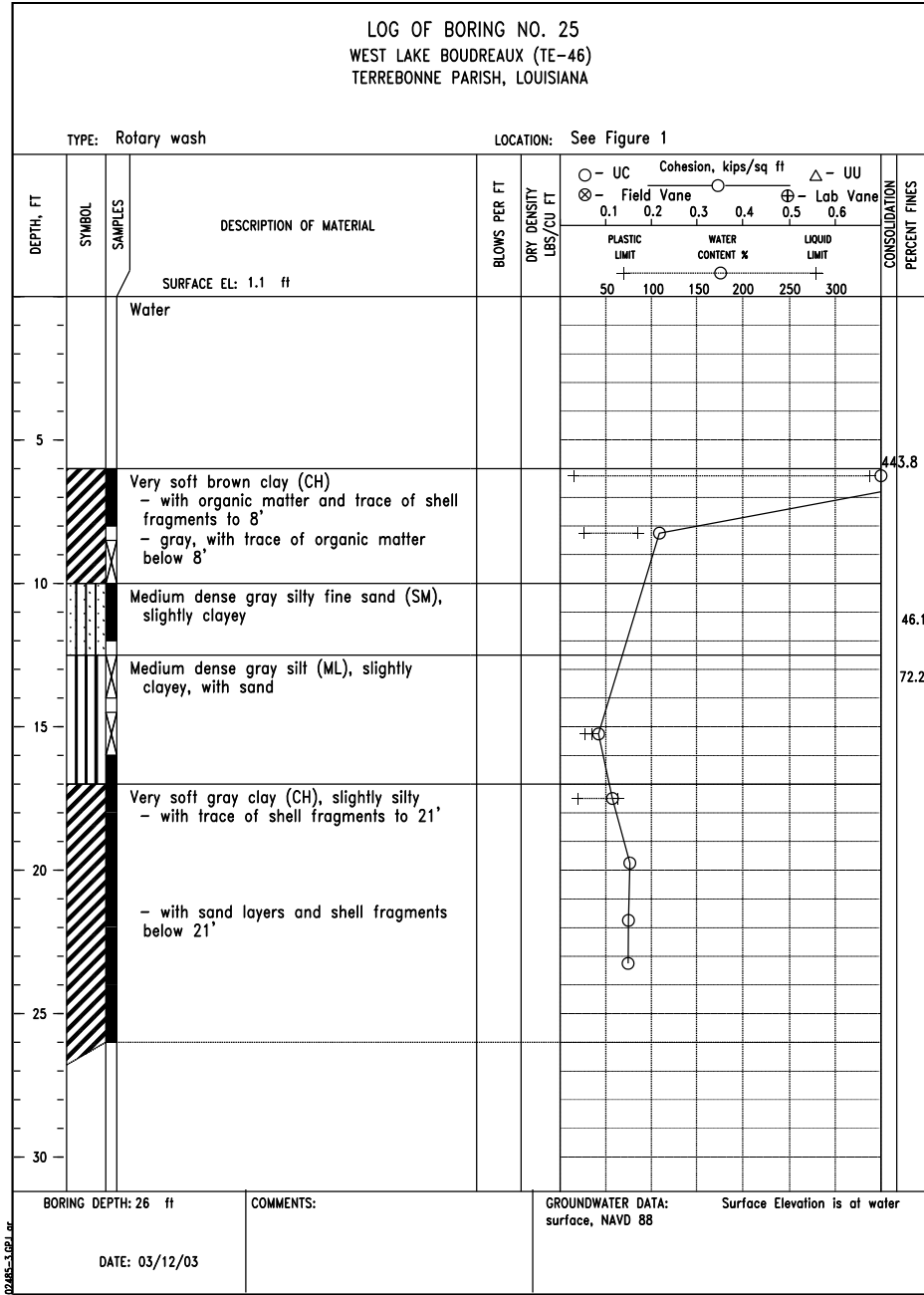


FIGURE A-25

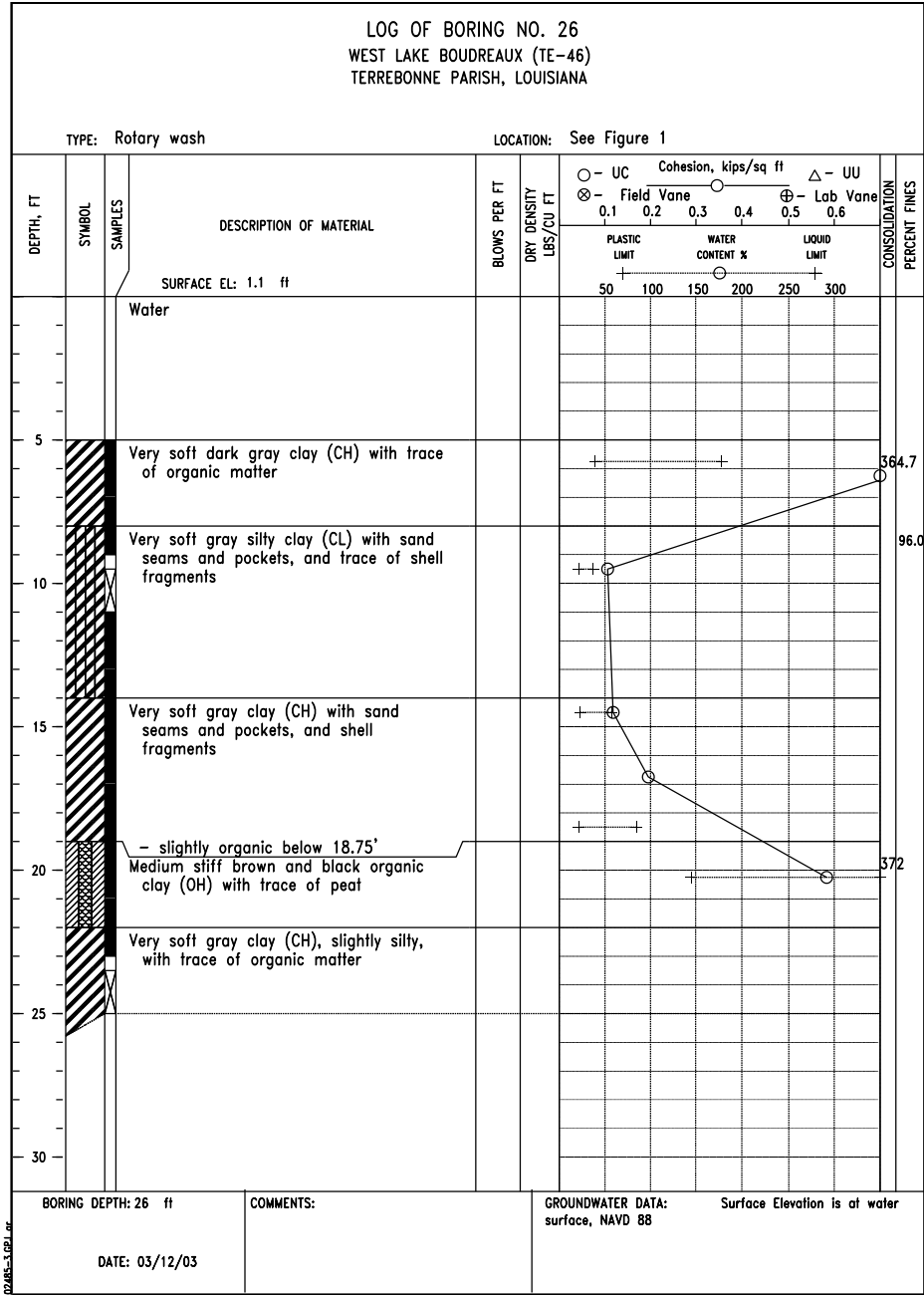


FIGURE A-26

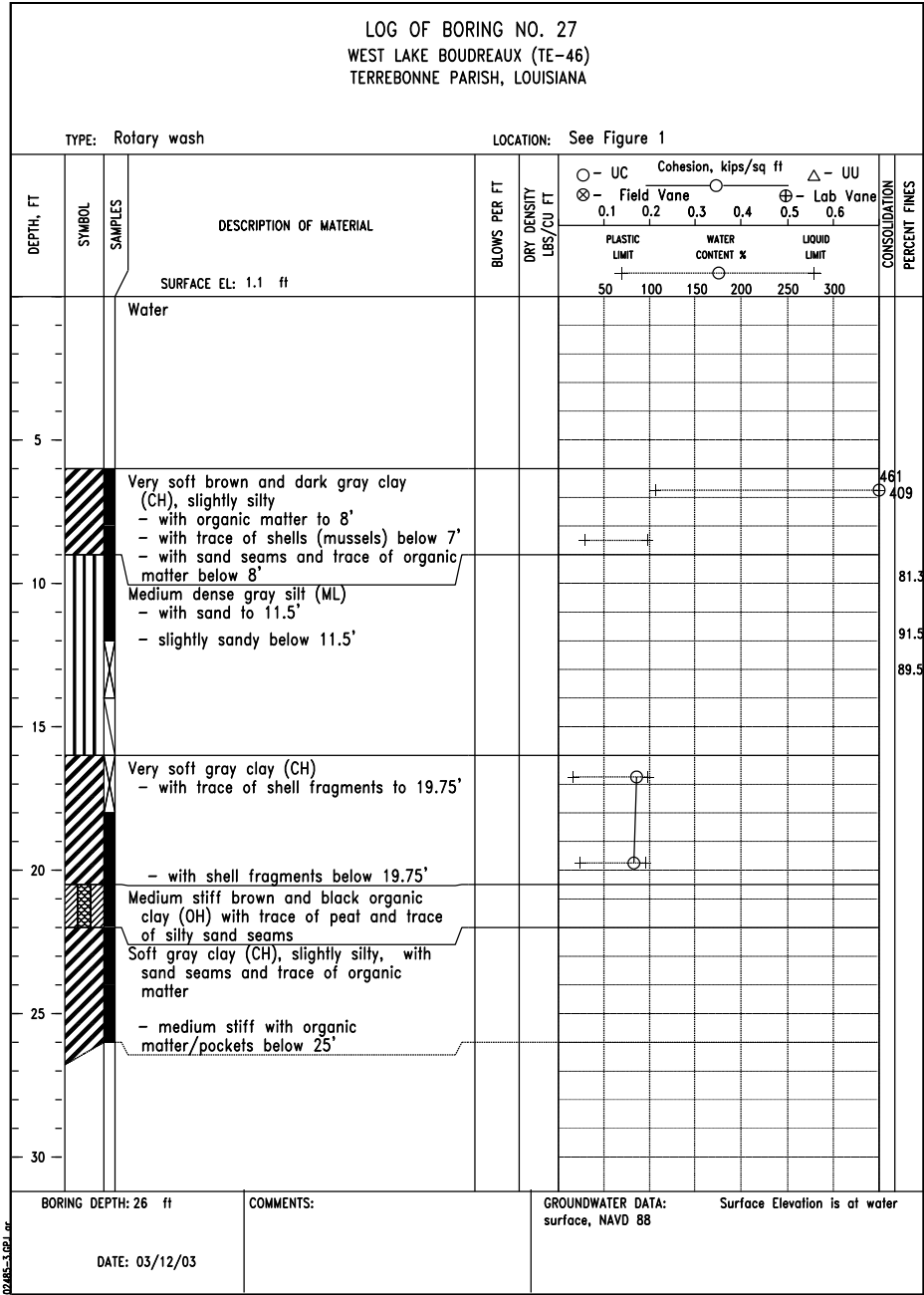


FIGURE A-27

"AS-BUILT"

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06/06  
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A.J. GREMLION  
B.A. STICKER  
E.J. GIERING III

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APPROVED

SOIL BORING LOGS: 25, 26 & 27  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

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LA346057.dgn

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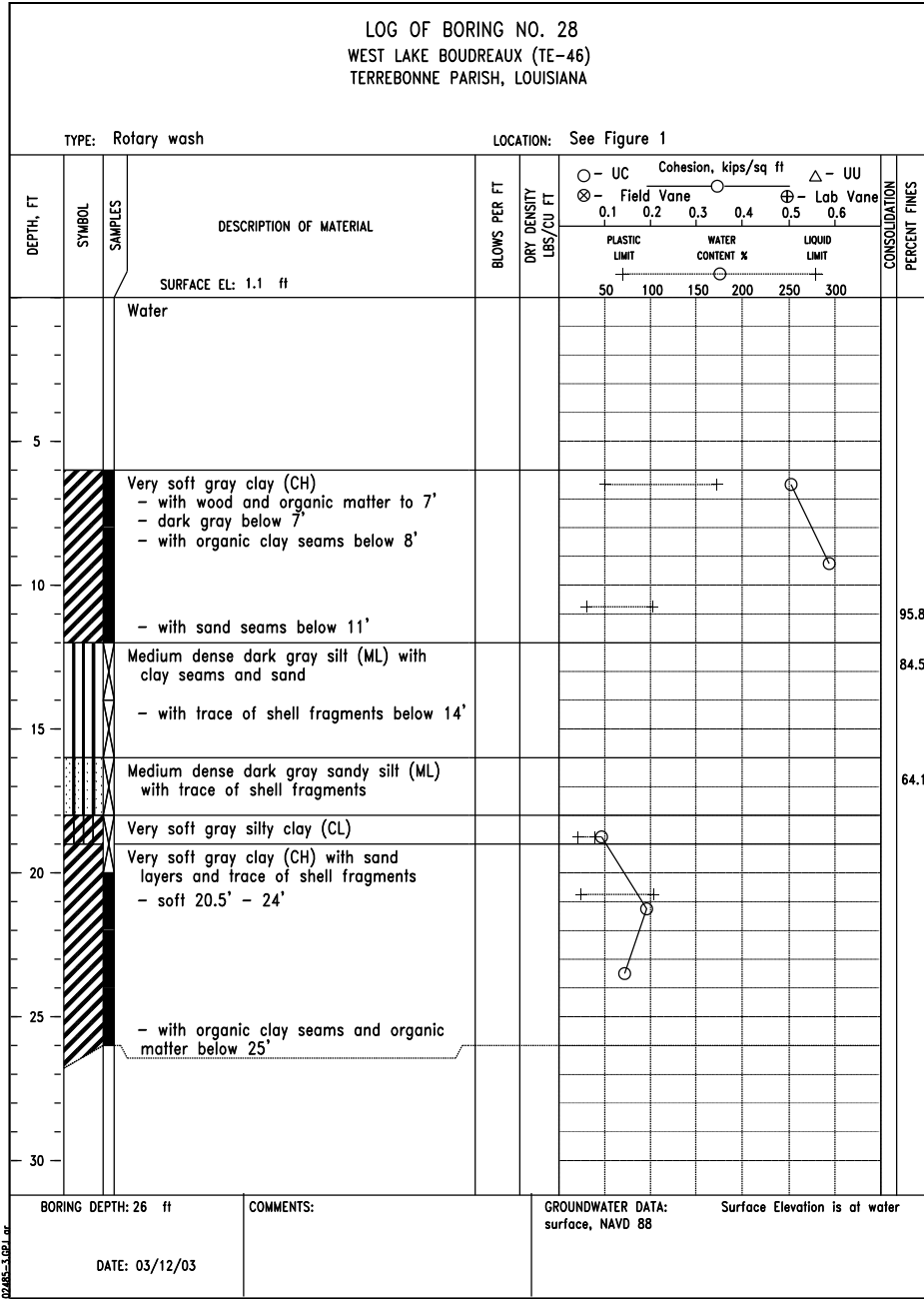


FIGURE A-28

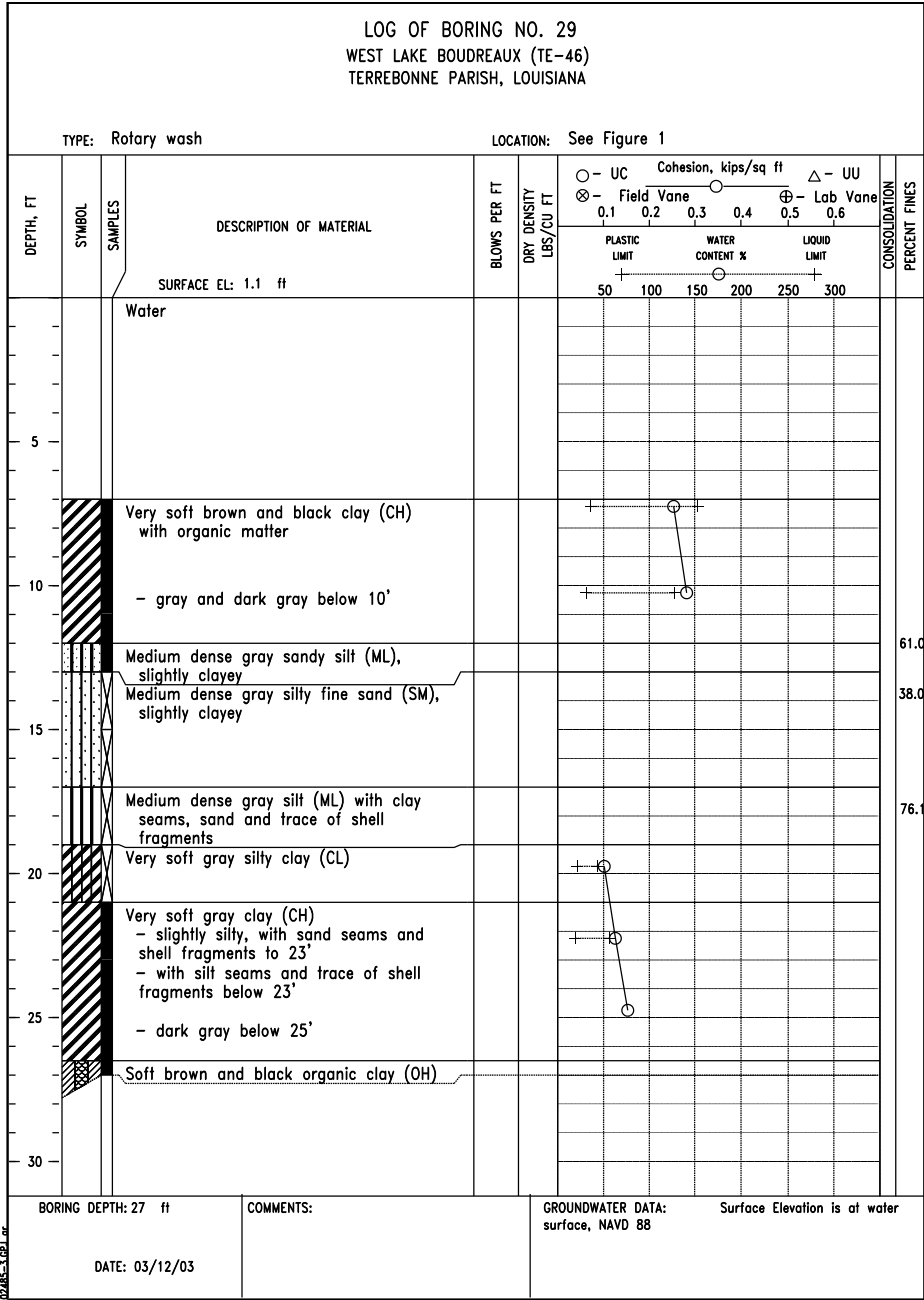


FIGURE A-29

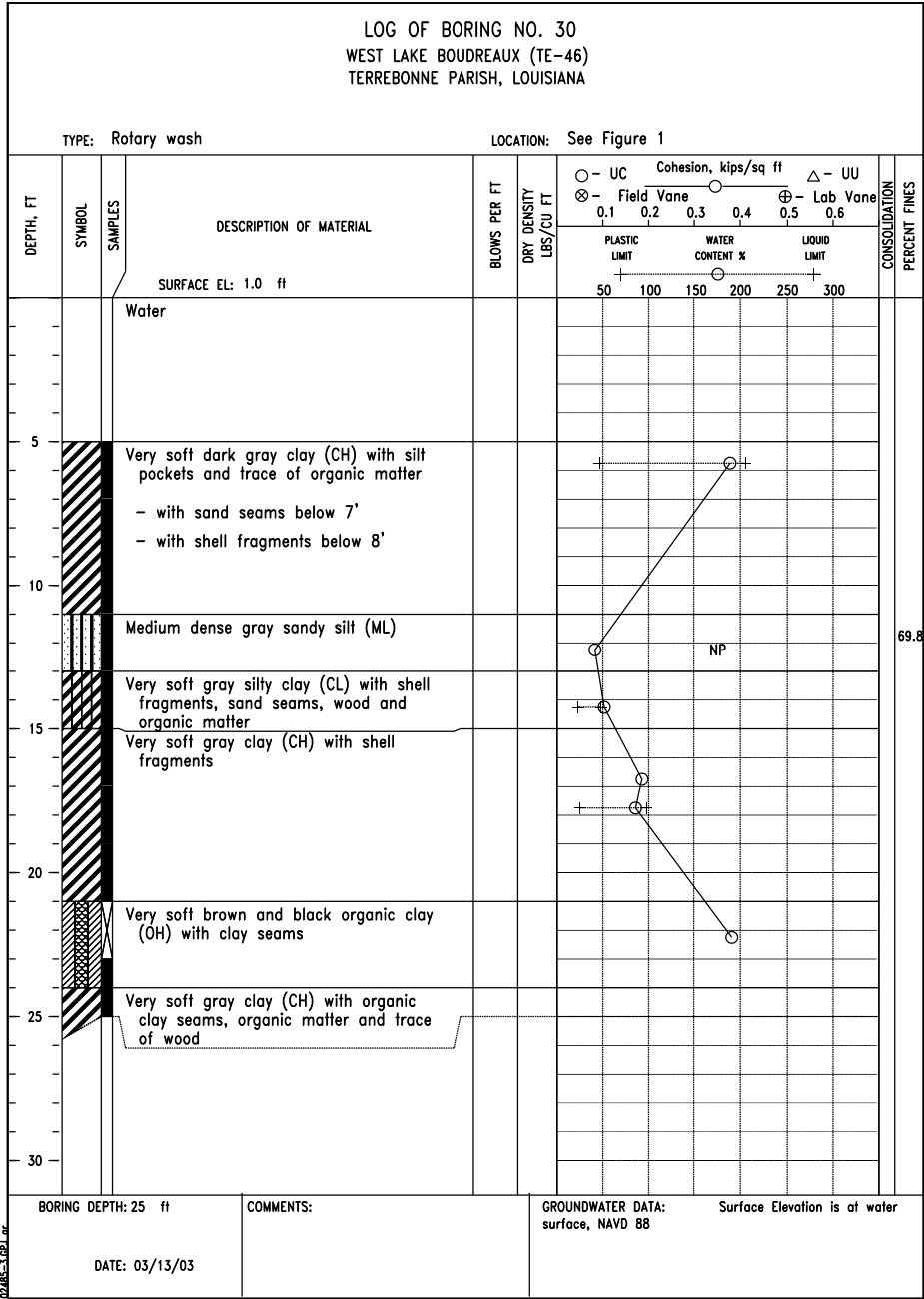


FIGURE A-30

SOIL BORING LOGS: 28, 29 & 30  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

DESIGNED: R. FAULKNER  
DRAWN: A.J. GREMLION  
CHECKED: B.A. STICKER  
APPROVED: E.J. GERING III

DATE: 01/05  
01/05  
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12/06



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DRAWING NAME: LA346058.dgn

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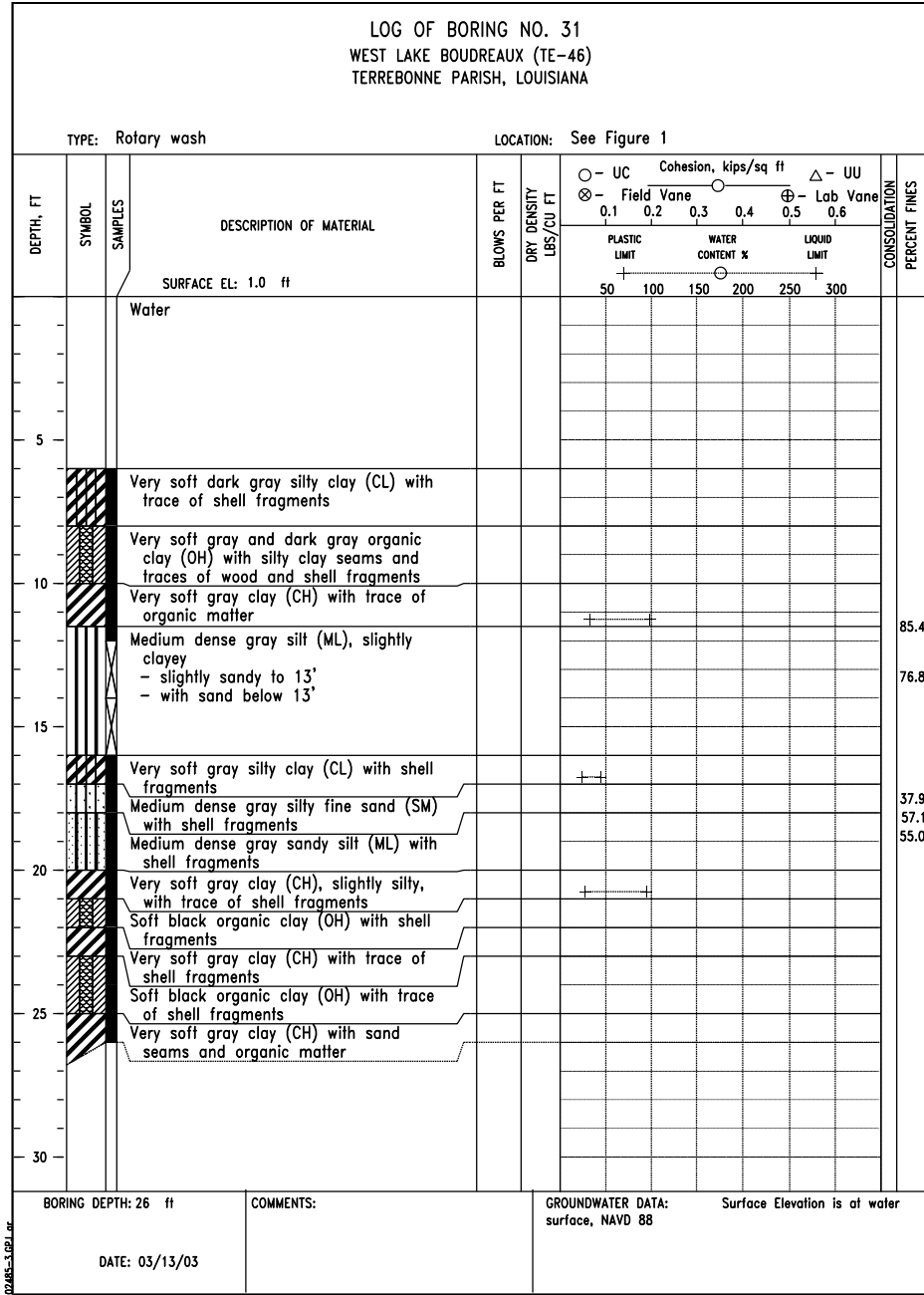


FIGURE A-31

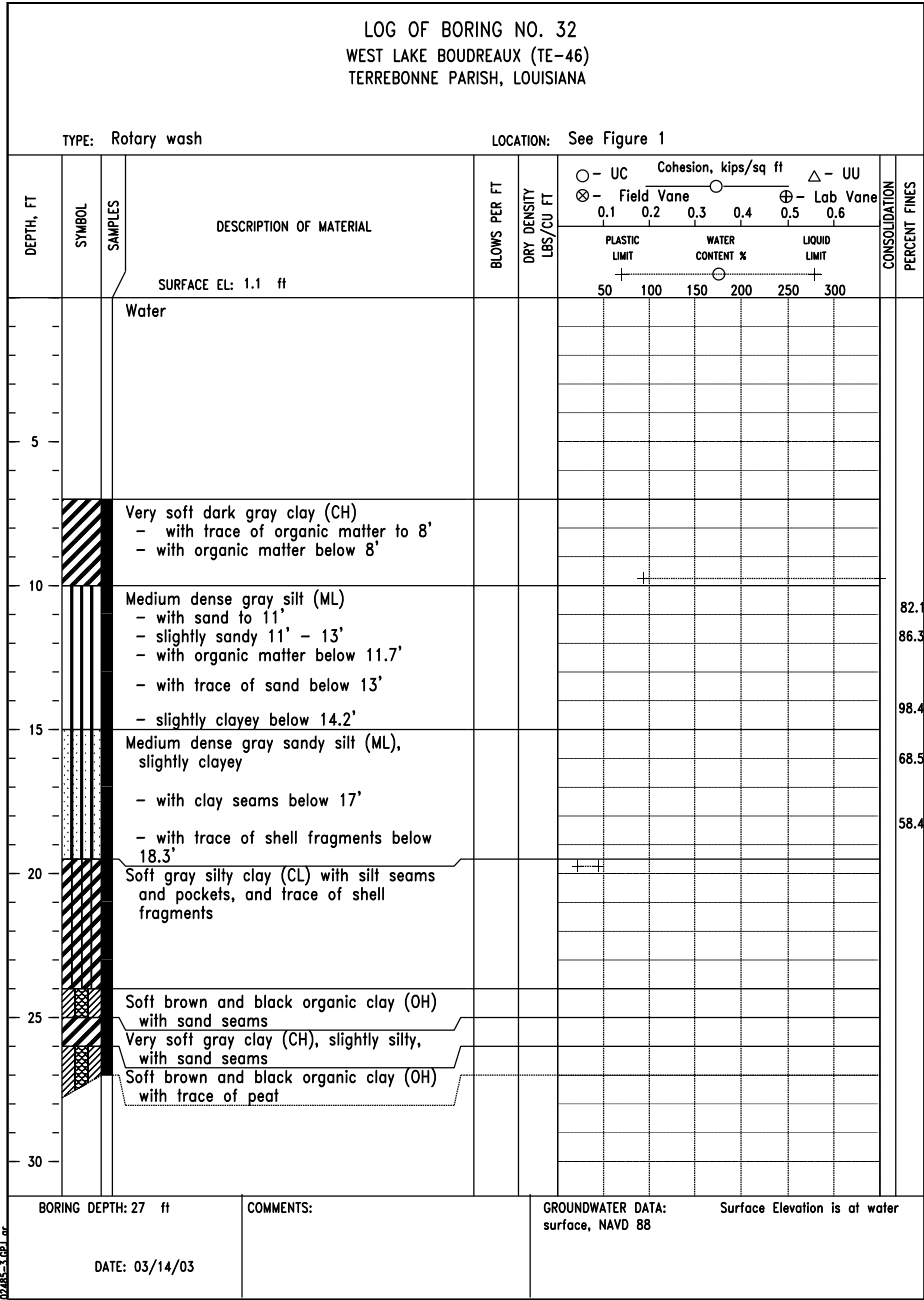


FIGURE A-32

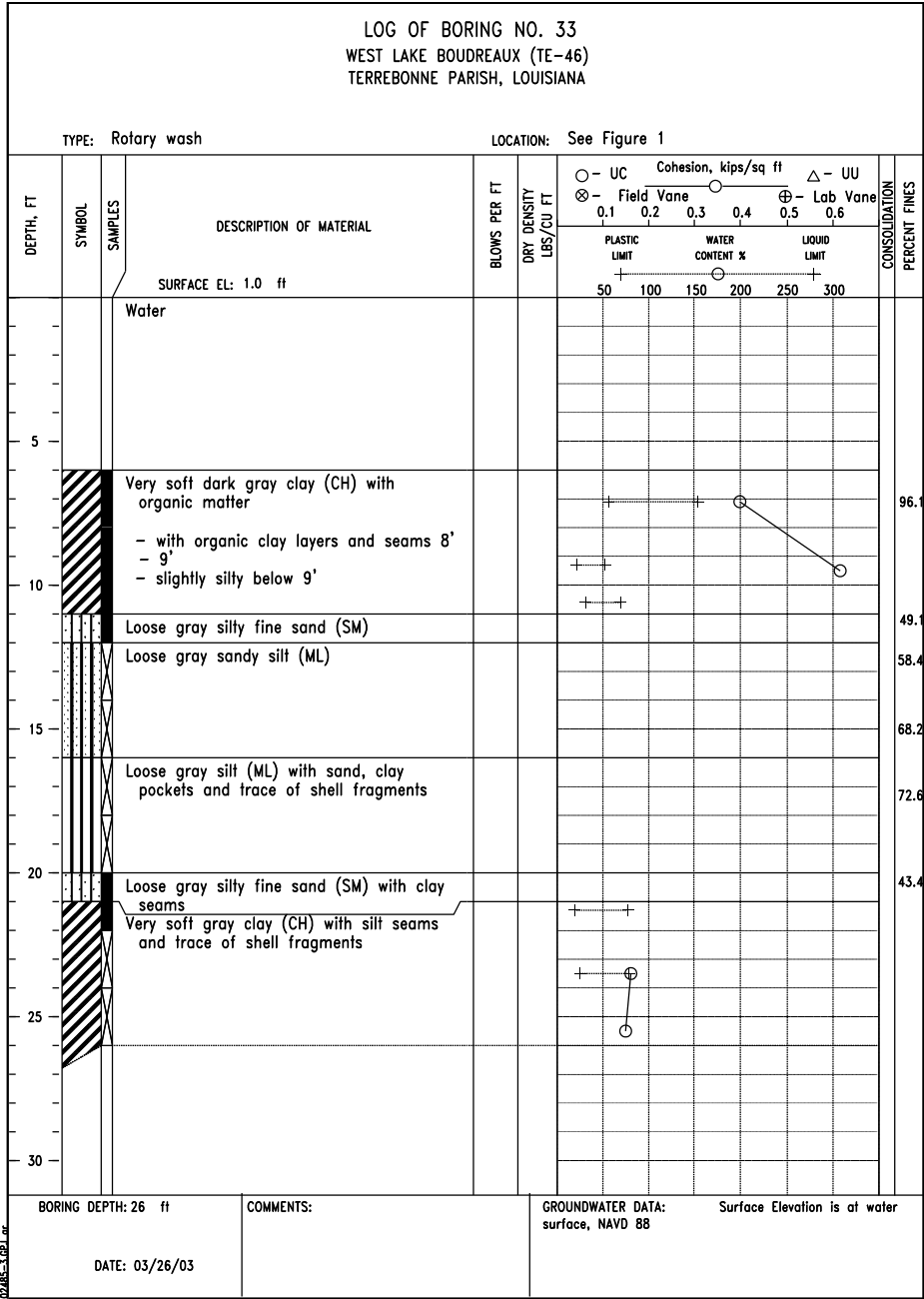


FIGURE A-33

"AS-BUILT"

DATE  
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01/05  
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R. FAULKNER  
A.J. GREMLION  
B.A. STICKER  
E.J. GIERING

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SOIL BORING LOGS: 31, 33 & 33  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

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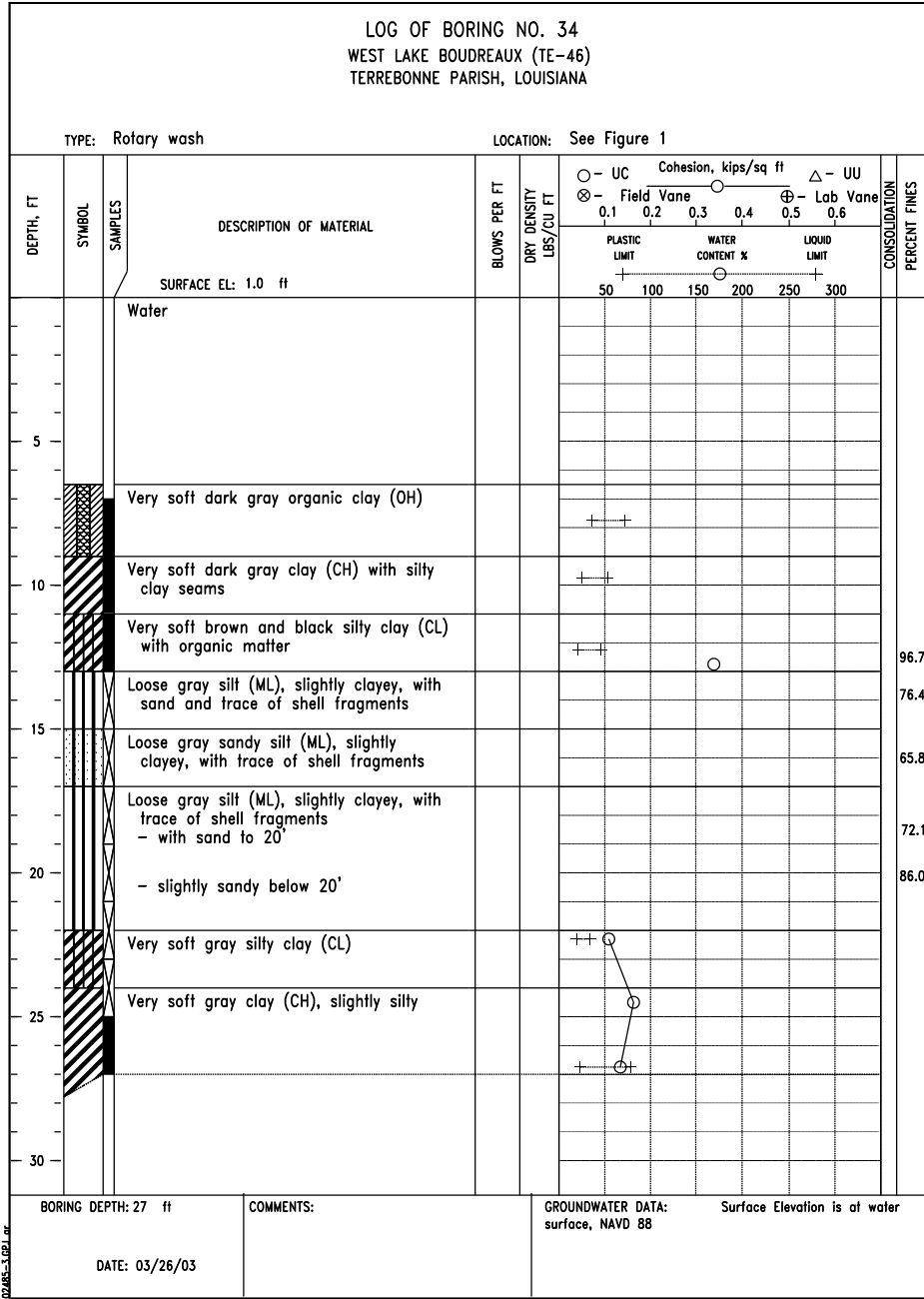


FIGURE A-34

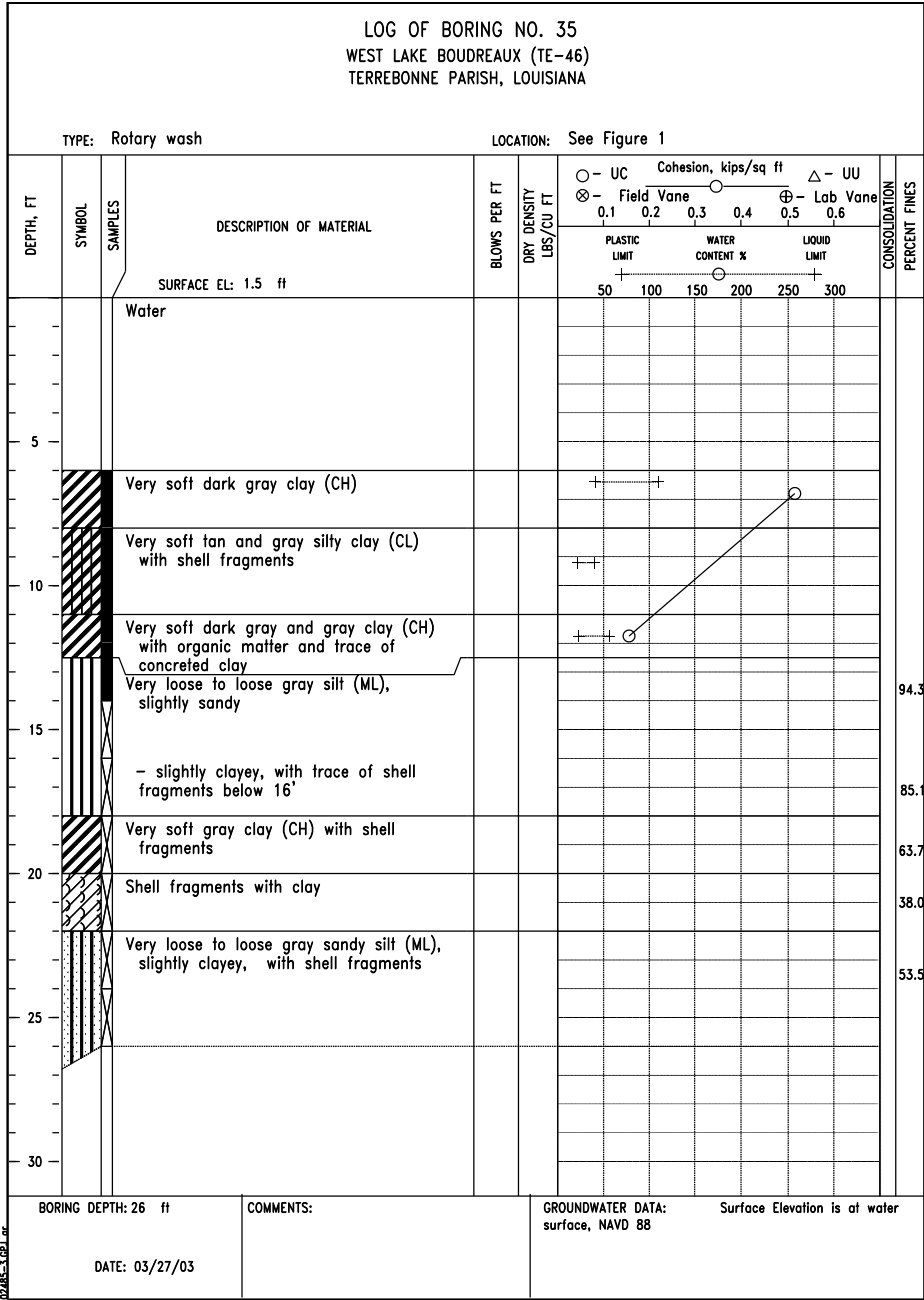


FIGURE A-35

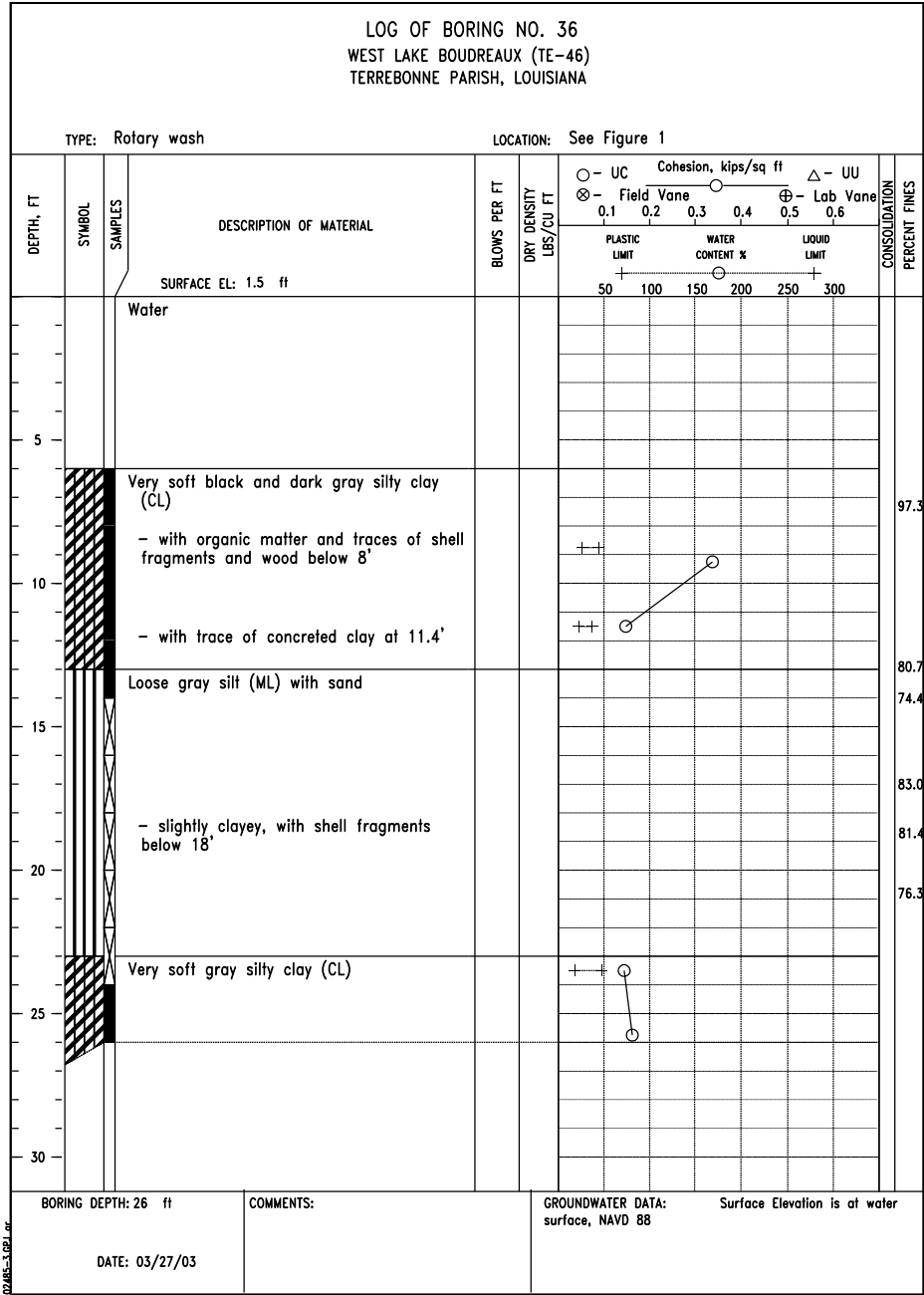


FIGURE A-36

"AS-BUILT"

SOIL BORING LOGS: 34, 35 & 36  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA



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LA-346

DRAWING NAME  
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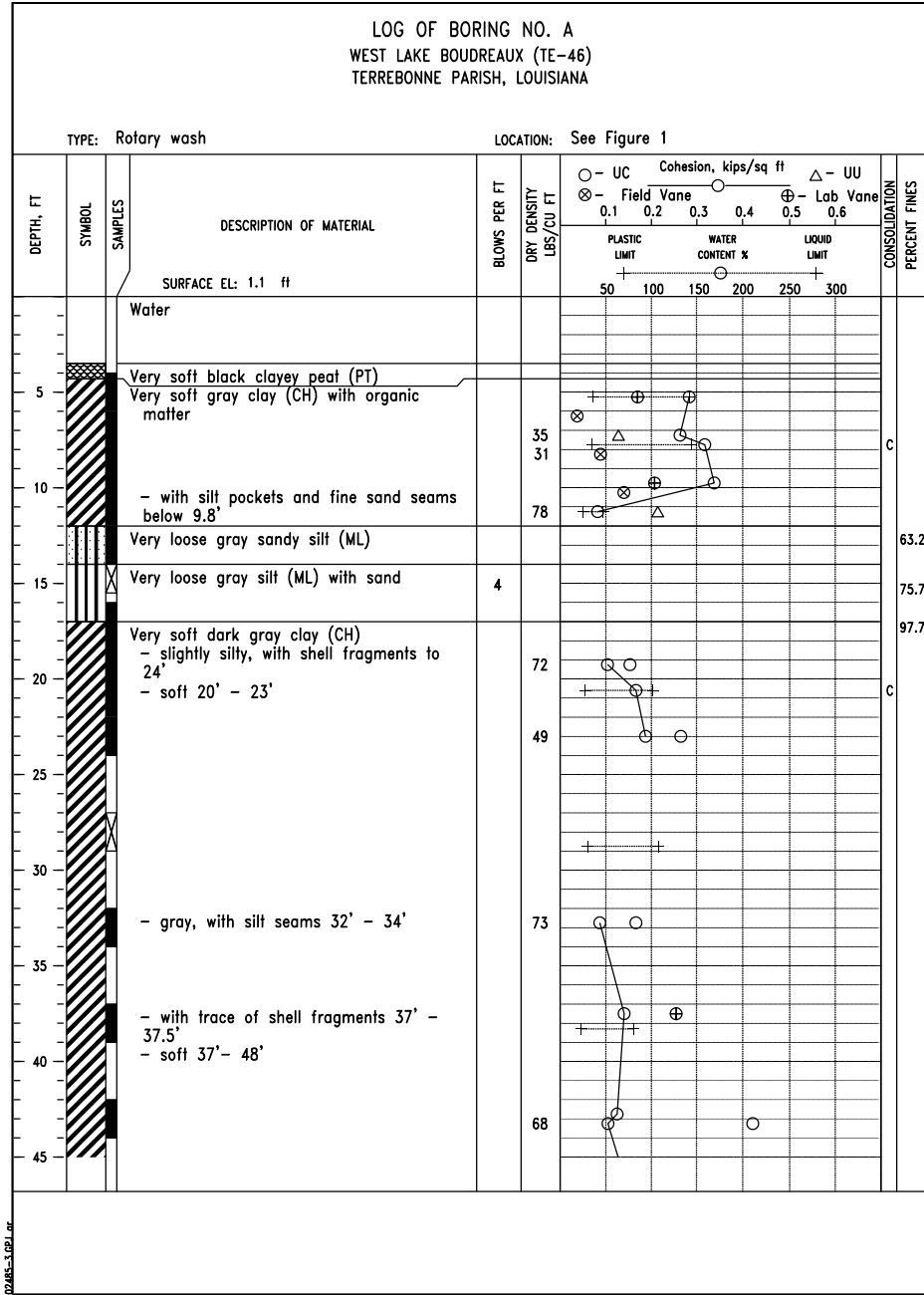


FIGURE A-37

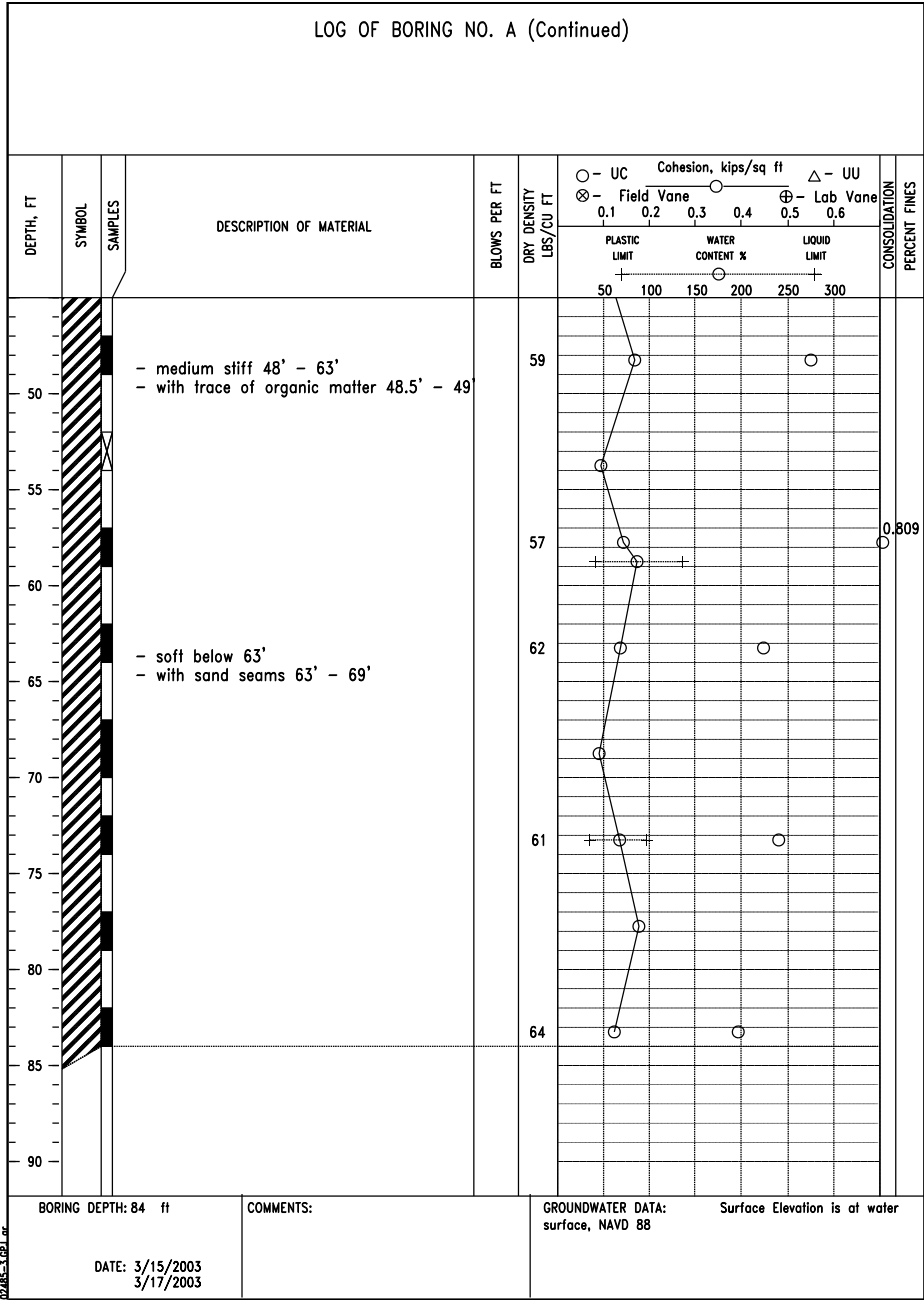


FIGURE A-38

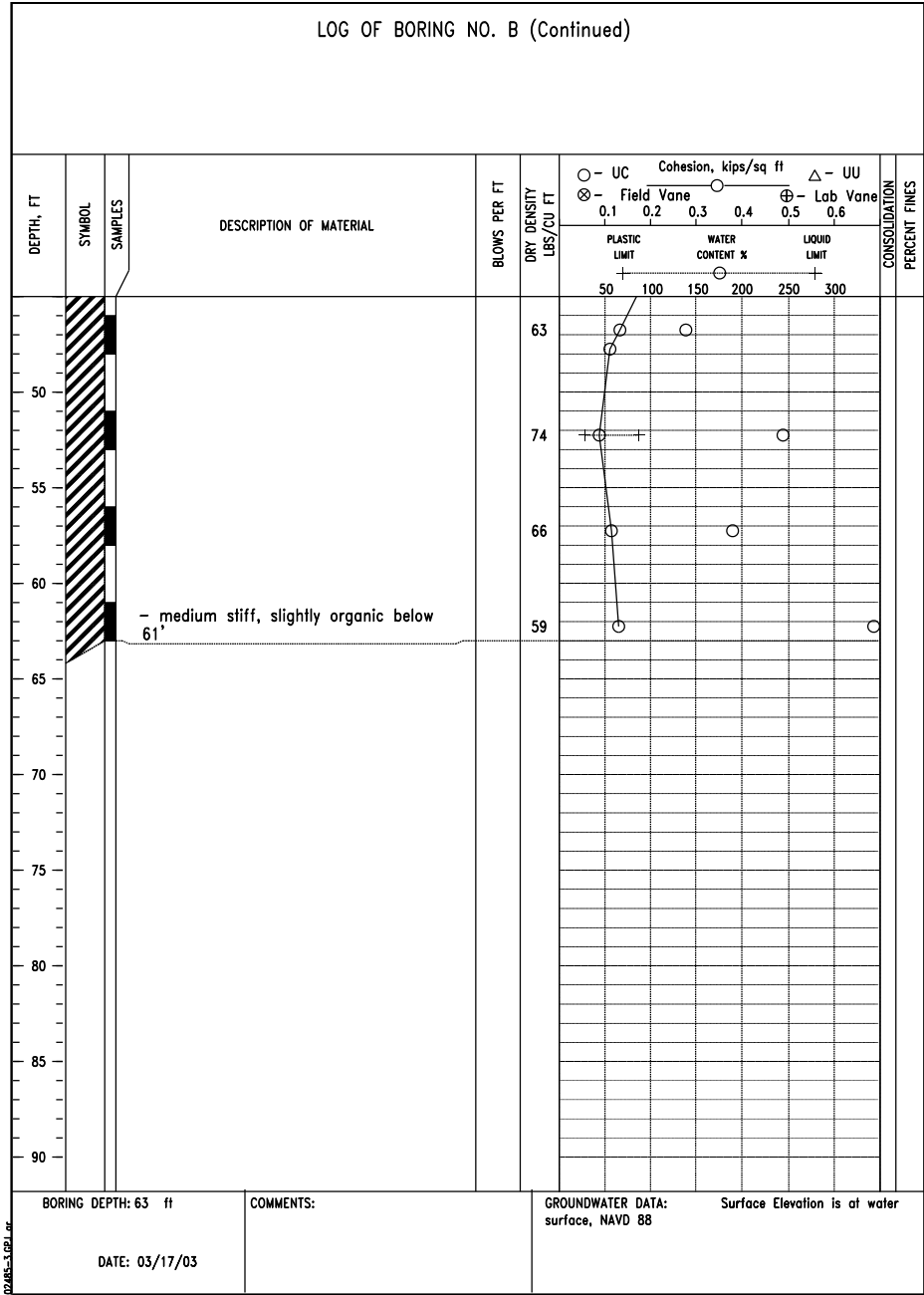
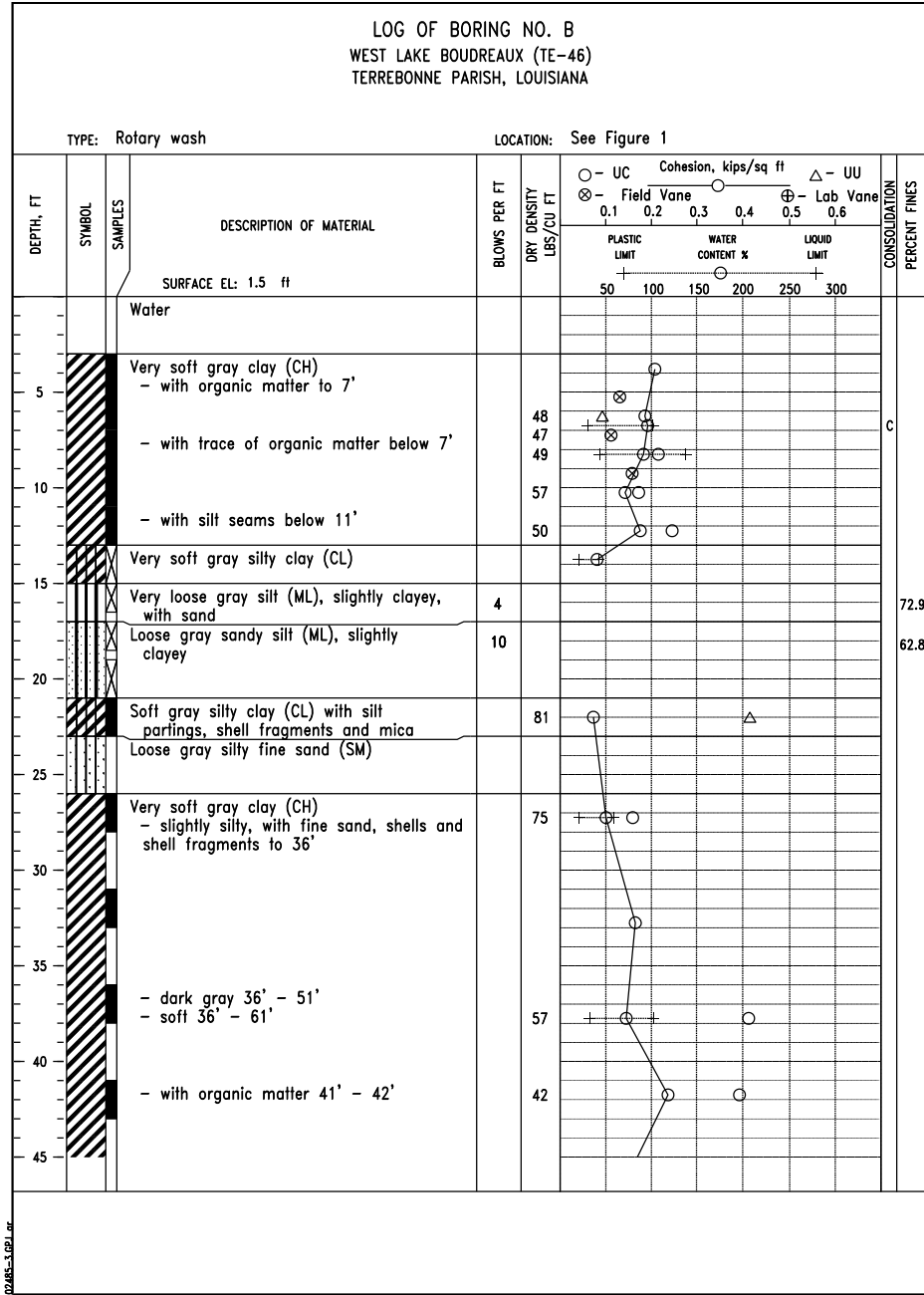
"AS-BUILT"

SOIL BORING LOG: A  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

DESIGNED	R. FAULKNER	DATE	01/05
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DRAWING NAME	LA346061.dgn



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B.A. STICKER

APPROVED  
E.J. GERING III

DATE  
01/05  
01/05  
06/06  
12/06

SOIL BORING LOG: B  
TE-46 - WEST LAKE BOUDREUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

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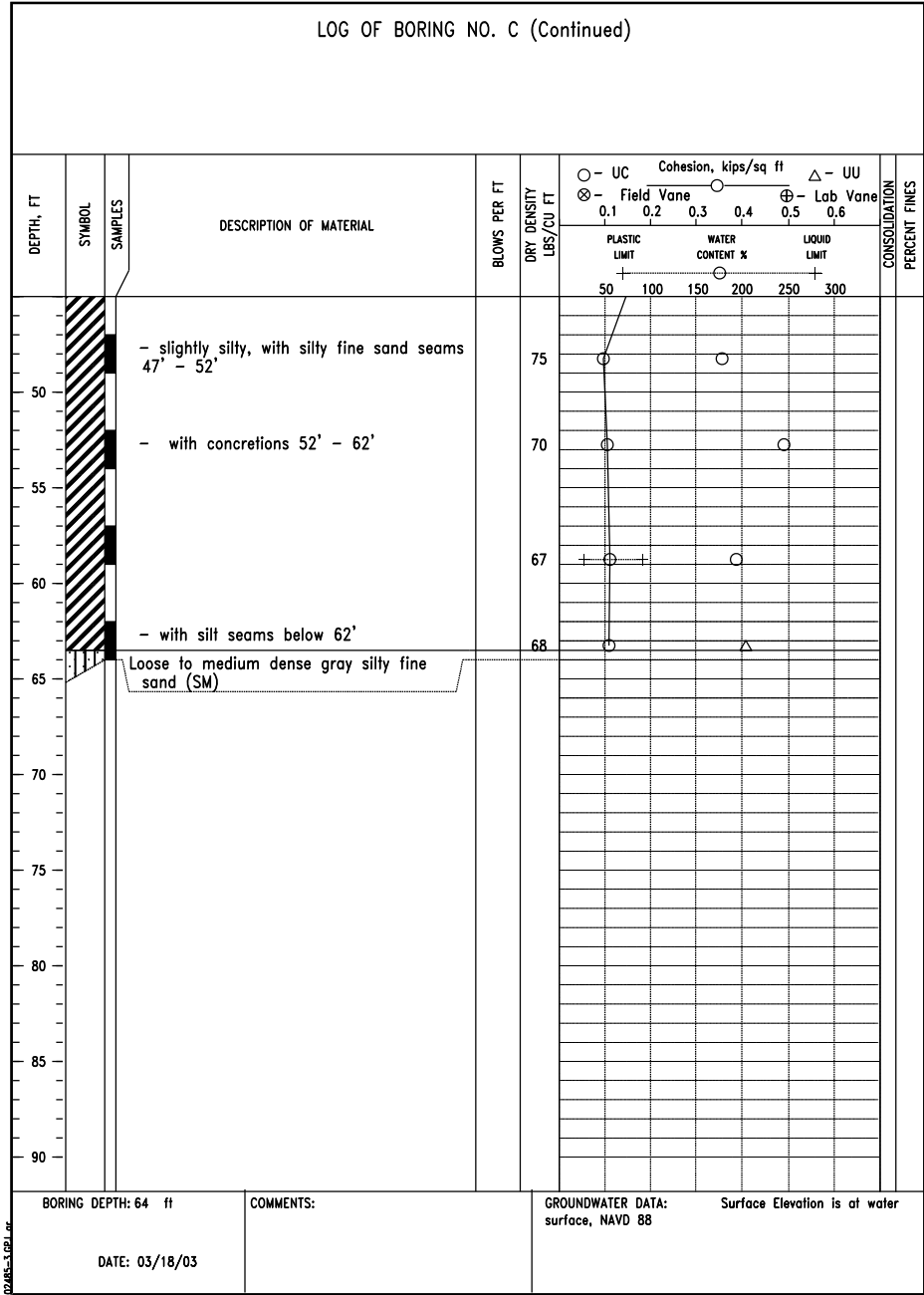
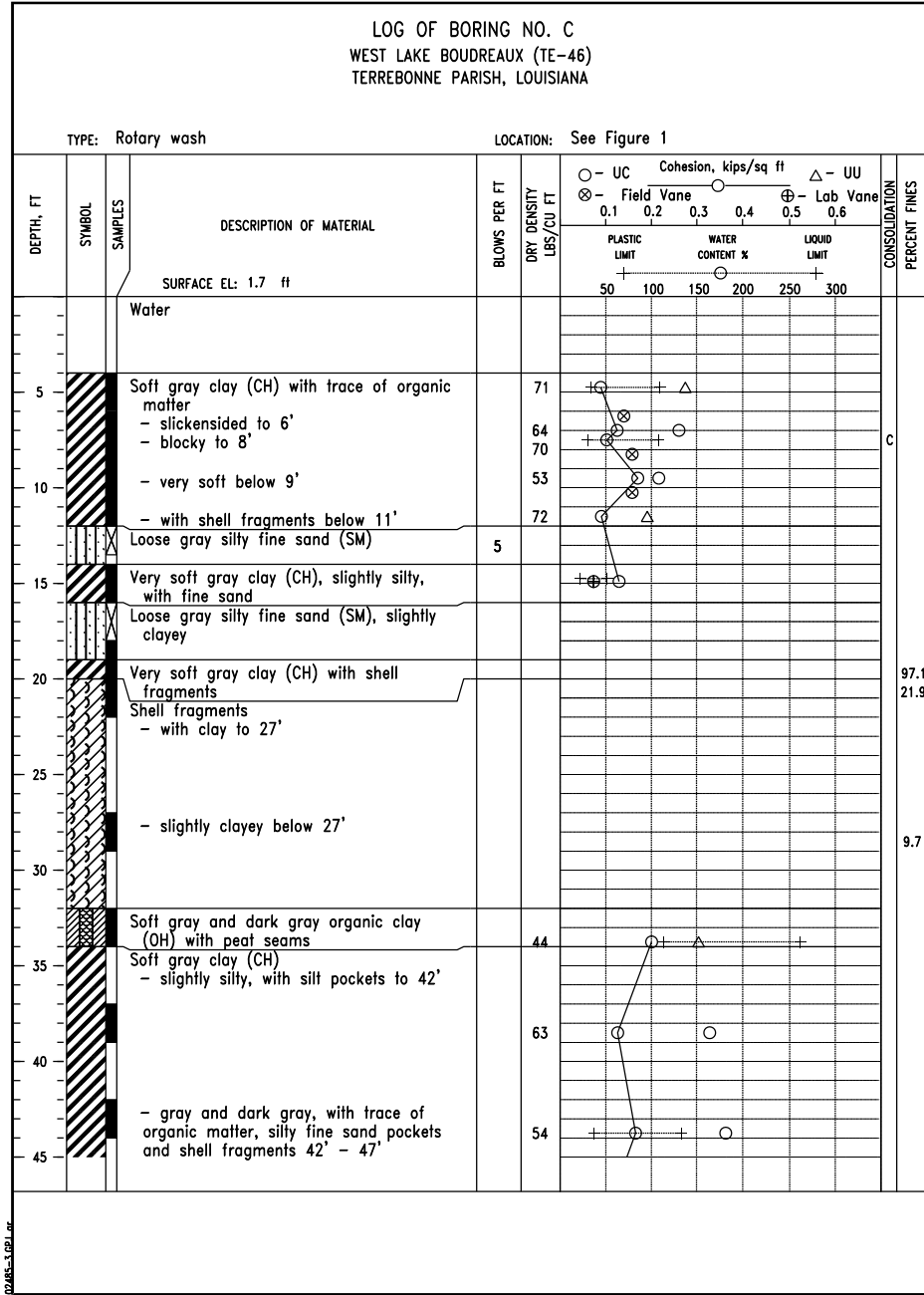
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LA-346

DRAWING NAME  
LA346062.dgn

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E.J. GERING III

DATE  
01/05  
01/05  
06/06  
12/06

SOIL BORING LOG: C  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

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United States Department of Agriculture

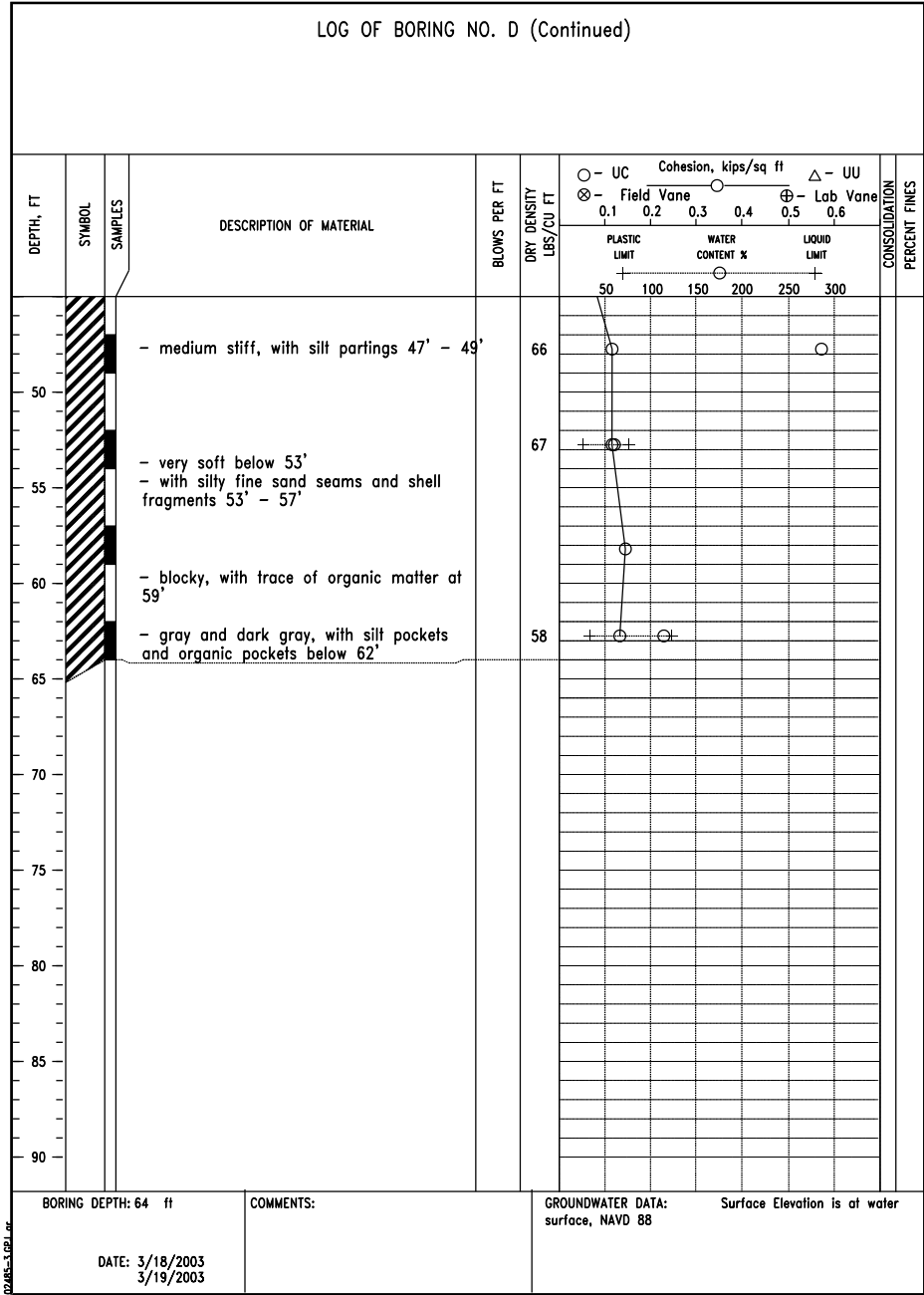
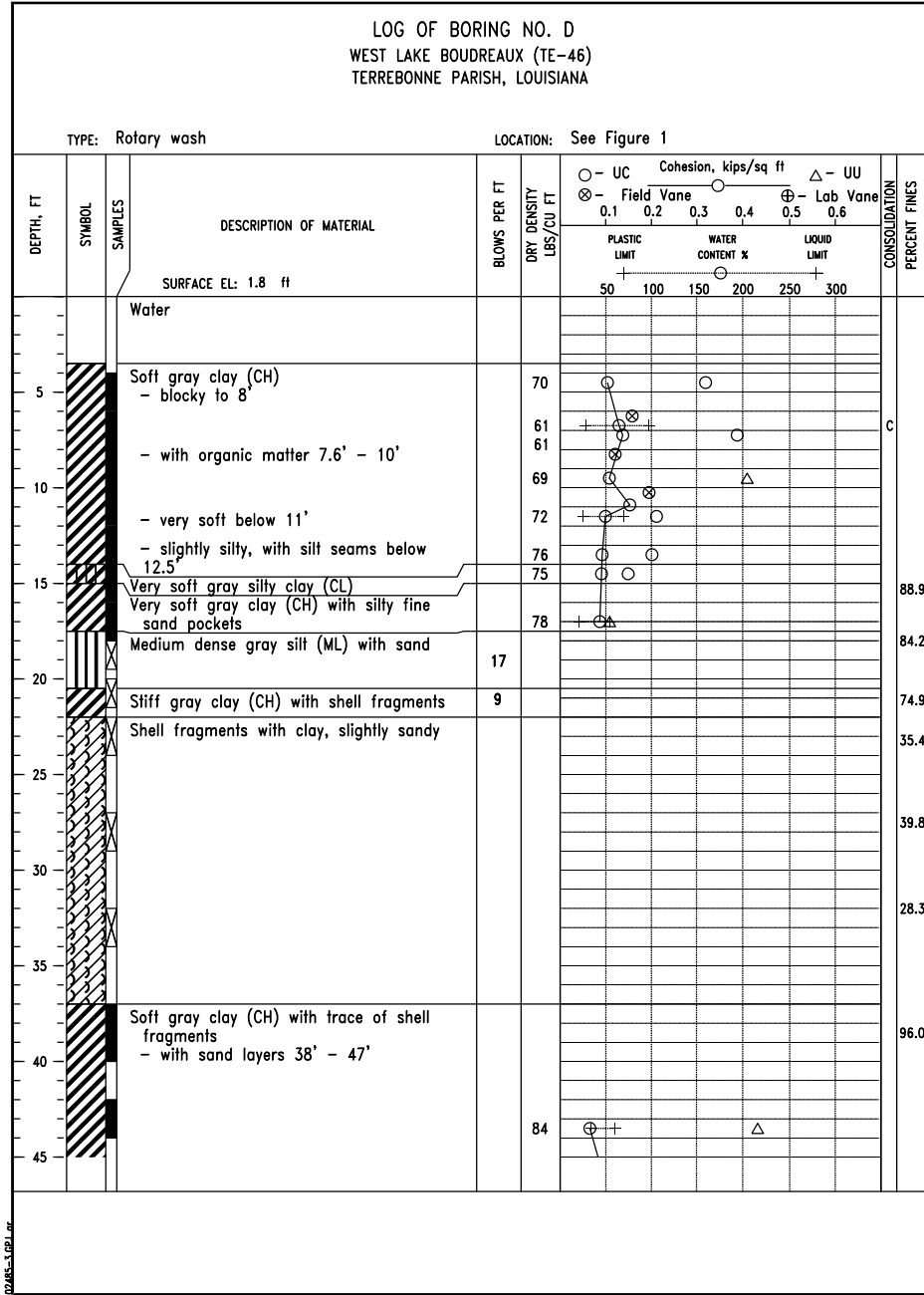
FILE NAME  
LA-346

DRAWING NAME  
LA346063.dgn

SHEET 63 of 65

'AS-BUILT'





"AS-BUILT"

SOIL BORING LOG: D  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

DESIGNED	R. FAULKNER	DATE	01/05
DRAWN	A.J. GREMILLION		01/05
CHECKED	B.A. STICKER		06/06
APPROVED	E.J. GERING III		12/06



FILE NAME	LA-346
DRAWING NAME	LA346064.dgn
SHEET	64 of 65

REVISIONS			
NO.	DATE	APPROVED	TITLE

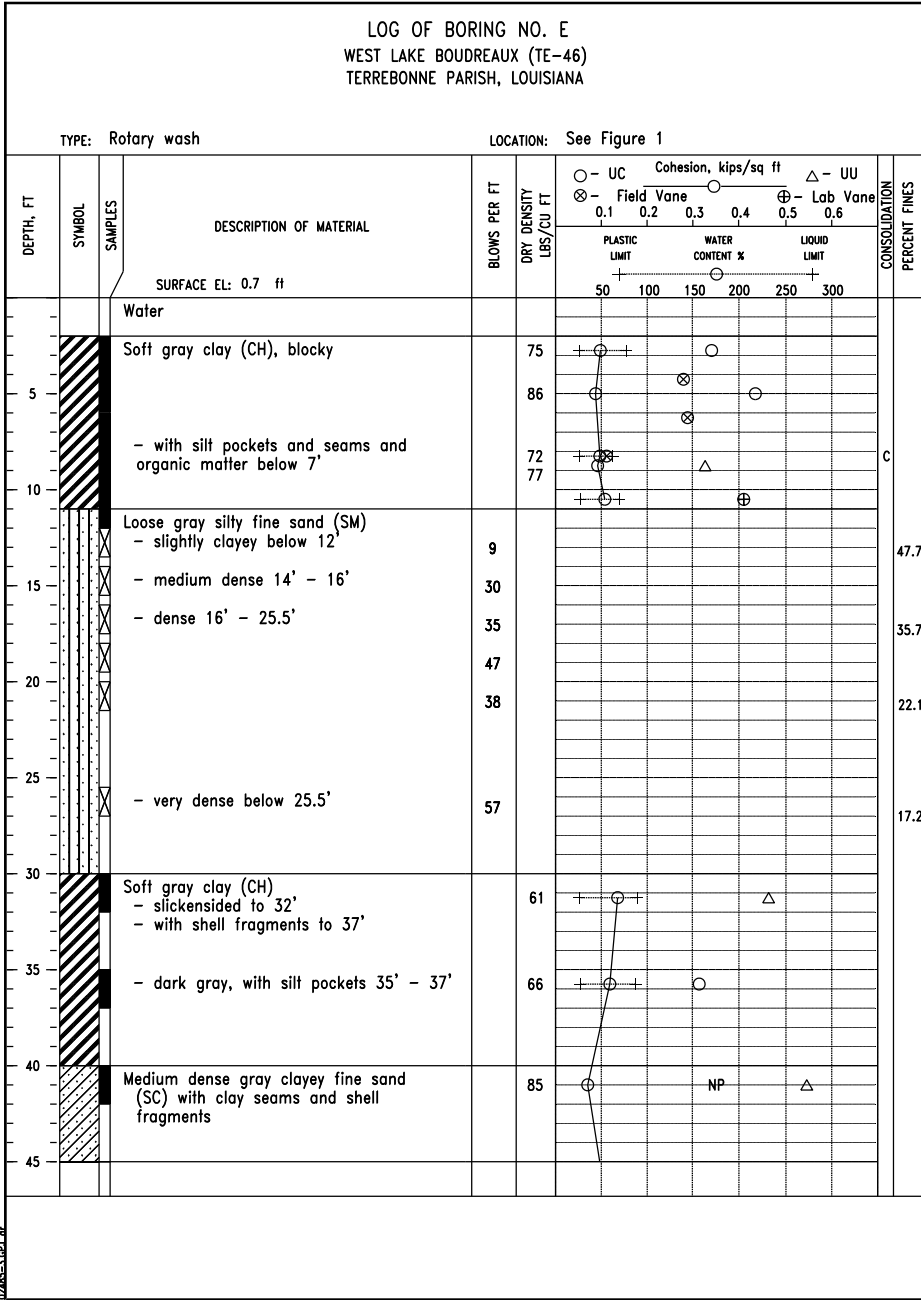


FIGURE A-45

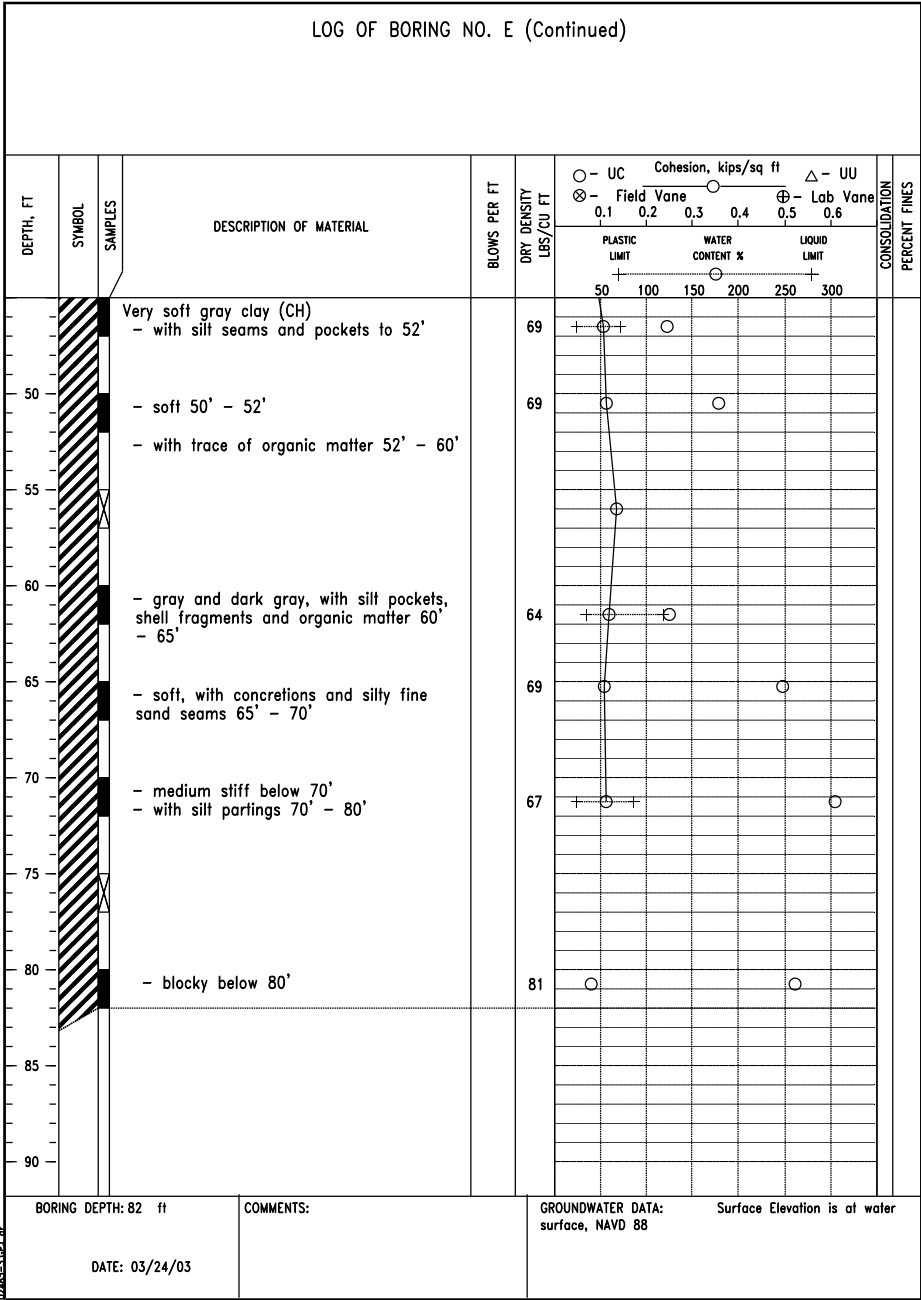


FIGURE A-46

LEGEND		
	SM	SILTY SAND, SAND-SILT MIXTURE
	SC	CLAYEY SAND, SAND-CLAY MIXTURE
	ML	SILT WITH LITTLE OR NO PLASTICITY
	ML	CLAYEY SILT, SILT WITH SLIGHT TO MEDIUM PLASTICITY
	ML	SANDY SILT
	CL	SILTY CLAY, LOW TO MEDIUM PLASTICITY
	CL	SANDY CLAY, LOW TO MEDIUM PLASTICITY (30% TO 50% SAND)
	CH	CLAY, HIGH PLASTICITY
	OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY
	PT	PEAT, HUMUS, SWAMP SOIL
		SHELL FRAGMENTS WITH CLAY

BH #	NORTHING	EASTING	BH DEPTH	MODEL PT.
1	338015.85	3489986.30	33	2974
2	337424.40	3489806.35	34	2975
A	336862.42	3489060.91	84	2987
6	335642.93	3487748.10	33	2979
B	335336.33	3487252.32	63	2988
7	334614.32	3487427.19	34	2980
C	334107.54	3487715.74	64	2989
10	332773.09	3487773.60	34	2983
D	332140.16	3487737.46	64	2990
12	331281.84	3488117.05	33	2985
E	330630.40	3488774.45	82	2991
13	329104.89	3488925.73	33	2986
3	337454.26	3487216.37	31	2976
4	336627.33	3487809.23	32	2977

BH #	NORTHING	EASTING	BH DEPTH	MODEL PT.
5	335948.19	3486506.67	33	2978
8	334757.83	3486489.77	31	2981
9	334190.08	3487170.02	30	2982
11	332329.45	3487151.98	30	2984
14	333487.19	3493811.12	26	3422
15	333600.19	3491811.12	26	3423
16	331616.19	3490981.12	26	3424
17	331690.19	3492985.12	26	3425
18	333600.19	3492478.12	26	3426
19	333600.19	3493145.12	26	3427
20	334100.19	3492811.12	26	3429
21	332600.19	3491811.12	26	3430
22	332487.19	3493811.12	26	3431
23	337716.19	3491081.12	26	1675

BH #	NORTHING	EASTING	BH DEPTH	MODEL PT.
24	334216.19	3491081.12	26	1682
25	330716.19	3491081.12	26	1683
26	338216.19	3492081.12	26	1678
27	335883.19	3492081.12	26	1679
28	333550.19	3492081.12	26	1680
29	331217.19	3492081.12	27	1681
30	337716.19	3493081.12	25	1677
31	334216.19	3493081.12	26	1684
32	330716.19	3493081.12	27	1685
33	331616.19	3491648.12	26	3432
34	331616.19	3492315.12	27	3433
35	332600.19	3492478.12	26	3434
36	332600.19	3493145.12	26	3435

"AS-BUILT"

REVISIONS			
NO.	DATE	APPROVED	TITLE

SOIL BORING LOG: E  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

DATE	01/05
DESIGNED	R. FAULKNER
DRAWN	A.J. GREMLION
CHECKED	B.A. STICKER
APPROVED	E.J. GIERING III



FILE NAME	LA-346
DRAWING NAME	LA346065.dgn

ATTACHMENT V

WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
(TE-46)

**PROJECT PERMITS  
&  
PERMIT AMENDMENTS**



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

646 Cajundome Blvd.

Suite 400

Lafayette, Louisiana 70506

November 7, 2005

Jim Rives, Acting Administrator  
Louisiana Department of Natural Resources  
Coastal Management Division  
P.O. Box 44487  
Baton Rouge, Louisiana 70804

Dear Mr. Rives:

The U.S. Fish and Wildlife Service hereby requests a Consistency Determination from the Louisiana Coastal Resources Program for implementation of the West Lake Boudreaux Shoreline Protection and Marsh Creation Project. That project was approved for funding by the Louisiana Coastal Conservation and Restoration Task Force (Task Force) in January 2002, as part of the 11<sup>th</sup> Priority Project List. As the lead Federal agency, the Service, along with the Louisiana Department of Natural Resources-Coastal Restoration Division, intends to request construction funds from the Task Force in January 2006, and begin construction in August 2006. The Service has reviewed all project features pursuant to NOAA Regulations at 33 CFR 930 Subpart C, and we have determined that they comply with Louisiana's approved coastal management program and will be conducted in a manner consistent with the Louisiana Coastal Resources Program.

We have enclosed a project description and a U.S. Army Corps of Engineers Permit Application for the proposed project features. Please forward a copy of the permit application to the U.S. Army Corps of Engineers-New Orleans District for processing of a Clean Water Act (Section 404) Department of Army Permit. Please forward an additional copy to the Louisiana Department of Environmental Quality for a water quality certification review. If you have any questions or comments regarding this project, please contact Robert Dubois of this office at (337) 291-3127.

Sincerely,

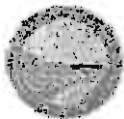
Russell C. Watson

Supervisor

Louisiana Field Office

Enclosures

cc: Ralph Libersat, LA Dept. of Natural Resources (CRD), Baton Rouge, LA



**Louisiana Department of Natural Resources**  
**Coastal Management Division (CMD)**  
 Telephone: 1-800-267-4019  
 Website: [www.dnr.state.la.us/crm/coastmgt/cup/cup.ssi](http://www.dnr.state.la.us/crm/coastmgt/cup/cup.ssi)



**U.S. Army Corps of Engineers (COE)**  
**New Orleans District**  
 Telephone: 504-862-2766  
 Website: [www.mvn.usace.army.mil/ops/regulatory](http://www.mvn.usace.army.mil/ops/regulatory)

## Joint Permit Application

### For Work Within the Louisiana Coastal Zone

#### What is the purpose of the Joint Permit Application?

This Joint Permit Application was developed to facilitate the state and federal permit application process administered by the Louisiana Department of Natural Resources/Coastal Management Division (CMD) and the U.S. Army Corps of Engineers (COE) for work within the Louisiana Coastal Zone.

To simplify the permit application process, the Joint Permit Application is a multi-purpose application. It may be used to apply for a Coastal Use Permit (CUP) and/or a Department of the Army Permit under Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act. This application may also be used to apply for a Solicitation of Views (SOV) or a CMD Request for Determination (RFD). Review the instructions below, then proceed to Step 1.

#### Instructions

##### How do I complete the Joint Permit Application?

There are two parts to the Joint Permit Application package:

1. Joint Permit Application, and
2. Maps and Drawings.

An accurate/complete application is required for processing; inaccurate/missing information may delay processing. Follow the instructions below to complete the application. Specific instructions are provided with each Step.

- Type or print clearly using black or blue ink;
- Steps 1 through 16 must be completed; write "N/A" if information does not apply to your proposed project. It is not necessary to write "N/A" on the Steps that you have been asked to skip;
- Although you may not be required to complete each Step, it is important to check the box at the end of each Step to track your progress and ensure that no Step has been overlooked.
- When additional space is needed, include an 8½ x 11 sheet of paper identifying the Step number.

When you have questions or need assistance in completing the application package:

- Refer to the "Glossary of Terms" (See page 10.);
- Refer to "Frequently Asked Questions" (See page 12.);
- Contact the Coastal Management Division at 1-800-267-4019 or 225-342-7591; or
- Contact your local coastal parish program (See page 11.).

☐ Check this box when you have read the instructions, then proceed to Step 1

#### Step 1 of 16

##### Who is the applicant for the proposed project?

*Note. Applicants may be either the landowner, person or company that is responsible for the proposed project*

Complete the following information about the applicant.

##### Applicant/Company

U.S. Fish and Wildlife Service- Russell C. Watson Supervisor Lafayette Field Office  
 Individual Person or Corporation/Company

##### Mailing Address:

**646 Cajundome Blvd., Suite 400**

Street Address or P.O. Box

Lafayette

City

Louisiana  
 State

Unit/Apartment #

70502  
 Zip

##### Contact Information:

Russell C. Watson

Name of Contact Person (not the agent)

russell\_watson@fws.gov

E-Mail Address

( 337 ) 291-3116

Area Code Daytime Telephone Number

( 337 ) 291-3139

Area Code Fax Number

☐ Check this box when you have completed Step 1; then proceed to Step 2

# Joint Permit Application *Continued (page 2 of 12)*

## Step 2 of 16

Is an agent being used for the proposed project?

*Note: An agent is not required.*

Is an agent being used for the proposed project?

- ☒ NO (If NO, proceed to Step 3.)  
☐ YES (If YES, complete the following information.)

Agent Company Name:

Corporation/Company

Mailing Address:

Street Address or P.O. Box

Unit/Apartment #

City

State

Zip

Contact Information:

Name of Contact Person

E-Mail Address

( )

( )

Area Code Daytime Telephone Number

Area Code Fax Number

☒ Check this box when you have completed Step 2, then proceed to Step 3

## Step 3 of 16

What type of permit or action would you like to request?

*Note: You may need the approval of other federal, state or local agencies for your project.*

*Note: For questions concerning the CUP, SOV or RFD, call CMD at 1-800-267-4019 or 225-342-7591.*

Check ☒ the appropriate box(es) to indicate the type of permit or action that you would like to request.

- ☒ **Coastal Use Permit (CUP), Clean Water Act Permit (Section 404), Rivers and Harbors Act (Section 10)**  
The purpose of the CUP is to ensure that any activity affecting the Coastal Zone is completed in a manner that is consistent with the Louisiana Coastal Resource Program.

The purpose of the Department of the Army permit program under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act is to review and evaluate proposals for dredging, filling, and/or placement of structures in waterways and wetlands in order to determine whether a permit should be granted or denied based on expected impacts to the overall public interest.

- ☐ **Solicitation of Views (SOV)**

If you wish to find out if your project is in the Coastal Zone or if you wish to determine if there are special features of the area that may impact your project design or the length of time it might take to obtain a permit, you may request a SOV. No application fee is assessed for SOV requests. The following Steps must be completed to obtain an informal determination.

- Step 1, Step 2, Step 6, Step 14, Step 16; and
- Step 13 - (Vicinity plat showing project location and extent is required; cross section and plan views are useful, if available.)

- ☐ **Request for Determination (RFD) - CMD only**

If you wish to obtain a formal determination as to whether or not a CUP would be required for a particular activity, you may submit a RFD. The appropriate application fee will be assessed for RFD requests. The following Steps must be completed to obtain a RFD.

- Step 1, Step 2, Step 5, Step 6, Step 8, Step 10, Step 14, Step 16; and
- Step 13 - (Vicinity plat showing project location and extent is required; cross section and plan views are useful, if available.)

☒ Check this box when you have completed Step 3; then proceed to Step 4

## Step 4 of 16

Have you participated in a Pre-Application or Geological Review Meeting or obtained a wetland determination?

*Note: To schedule a Pre-Application and/or a Geological Review Meeting, call CMD at 1-800-267-4019.*

*Note: To apply for a wetland determination, call the COE at 504-862-1627.*

a. Have you participated in a Pre-Application or Geological Review Meeting for the proposed project?

- ☒ NO (If NO, proceed to Step 4b.)  
☐ YES (If YES, complete the following information.)

Date meeting was held: \_\_\_\_/\_\_\_\_/\_\_\_\_

Attendees:

Individual or Company Representative

CMD Representative

COE Representative

b. Have you obtained an official wetland determination from the COE for the project site?

- ☒ NO (If NO, proceed to Step 4c.)  
☐ YES (If YES, include a copy with this application.)

c. Is this application a mitigation plan for another CUP?

- ☒ NO (If NO, proceed to Step 5.)  
☐ YES (If YES, identify the permit number of the project requiring mitigation.)

Permit Number: \_\_\_\_\_

☒ Check this box when you have completed Step 4; then proceed to Step 5

Continue to page 3 for Step 5.





## Joint Permit Application *Continued (page 3 of 12)*

### Step 5 of 16

What permits/certifications have you previously requested for the proposed project?

*Note: Additional sheets may be required for agency name, permit number and status information.*

a. Is this application a change to an existing permit?

- ☒ NO (If NO, proceed to Step 5b.)  
☐ YES (If YES, identify the existing permit number.)

Permit Number: \_\_\_\_\_

b. Have you *previously* applied for a permit or emergency authorization for all or any part of the proposed project?

- ☒ NO (If NO, proceed to Step 6.)  
☐ YES (If YES, complete the following information for the proposed project.)

	Agency Name	Permit Number	Decision Status			Decision Date
			Approved	Denied	Pending	
CMD	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____/____/____
COE	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____/____/____
Other	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____/____/____

☒ Check this box when you have completed Step 5; then proceed to Step 6.

### Step 6 of 16

Where will the proposed project be located?

*Note: The following websites may provide assistance in completing the latitude/longitude and directions.*

- Sonris on CMD website
- MapQuest.com
- Topozone.com

Complete the following information to identify the exact location of the proposed project.

a. Physical Location:

Terrebonne  
Parish \_\_\_\_\_ City \_\_\_\_\_ Zip \_\_\_\_\_  
Street Address (if known) \_\_\_\_\_

b. Latitude and Longitude:



Must be included in all applications.

Latitude: 29 25 01N Longitude: 90 41 00W  
Degrees Minutes Seconds Degrees Minutes Seconds

c. Section, Township, Range: (if available)

Section # \_\_\_\_\_ Township # (Specify North or South.) \_\_\_\_\_ Range # (Specify East or West.) \_\_\_\_\_  
Section # \_\_\_\_\_ Township # (Specify North or South.) \_\_\_\_\_ Range # (Specify East or West.) \_\_\_\_\_

d. Lot #, Tract #, Parcel # or Subdivision Name: (if known)

N/A  
Lot # \_\_\_\_\_ Parcel # \_\_\_\_\_  
Tract # \_\_\_\_\_ Subdivision Name \_\_\_\_\_

e. Site Directions: Directions to the proposed project site must be identified in order to process the application.

**Example:** START - I-10 toward Baton Rouge. Exit #153 toward Port Allen. US-190 West/LA-1 North ramp. RIGHT onto LA-987 1/Bridge Side Road. RIGHT onto LA-986/North River Road to Popular Grove Plantation directly behind guest parking lot in rear. - END

From N.O. take Hwy 90W to Houma, exit LA Hwy. 24S to Hwy 57S. At end of Hwy 57S is Boat Launch.  
By boat, south on grand Caillou to Bagou Dubas (E) which to Lake Quitman. North through Lake  
Quitman to Lk. Boudreaux. North West Bank

☒ Check this box when you have completed Step 6; then proceed to Step 7.

Continue to page 4 for Step 7.

# Joint Permit Application *Continued (page 4 of 12)*

## Step 7 of 16

Who are the adjacent landowners?

*Note: Adjacent landowner information is usually available through the office of the tax assessor in the parish where the project is to be developed.*

*Note: Additional information may be included in the area provided on page 12. Also, extra sheets may be required if there are more than eight adjacent landowners.*

Complete the following information to notify adjacent landowners whose property adjoins the proposed project site.

Adjacent Landowner #1:

See Attached Landowner Listings  
Name of Adjacent Landowner

Mailing Address:

Address \_\_\_\_\_ Unit/Apartment # \_\_\_\_\_  
City \_\_\_\_\_ Parish \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Adjacent Landowner #2:

\_\_\_\_\_  
Name of Adjacent Landowner

Mailing Address:

Street Address or P.O. Box \_\_\_\_\_ Unit/Apartment # \_\_\_\_\_  
City \_\_\_\_\_ Parish \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Adjacent Landowner #3:

\_\_\_\_\_  
Name of Adjacent Landowner

Mailing Address:

Street Address or P.O. Box \_\_\_\_\_ Unit/Apartment # \_\_\_\_\_  
City \_\_\_\_\_ Parish \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Adjacent Landowner #4:

\_\_\_\_\_  
Name of Adjacent Landowner

Mailing Address:

Street Address or P.O. Box \_\_\_\_\_ Unit/Apartment # \_\_\_\_\_  
City \_\_\_\_\_ Parish \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

☒ Check this box when you have completed Step 7; then proceed to Step 8

## Step 8 of 16

What is the purpose of the proposed project?

*Note: We are required to review the justifications and needs for your project. Providing detailed information at the time of application may expedite processing of your proposal.*

*Note: Additional sheets may be required to explain why the proposed project is needed.*

Complete the following information to identify the purpose and need for the proposed project.

a. Project Name and/or Title: West Lake Boudreaux shoreline Protection & marsh Creation Project  
CWPPRA -TF-46

b. Project Type: (Check ☒ the appropriate box. See the "Glossary" on page 10 for the definitions of terms.)

- ☒ Non-Residential  
☐ Residential

c. Check ☒ the appropriate box(es) to identify what will be done for the proposed project.

- |   |   |   |   |
|---|---|---|---|
| <input type="checkbox"/> Bridge/Road  | <input type="checkbox"/> Home site/Driveway   | <input type="checkbox"/> Pipeline/Flow line         | <input checked="" type="checkbox"/> Rip rap/Erosion control |
| <input type="checkbox"/> Bulkhead/Fill  | <input type="checkbox"/> Levee construction   | <input type="checkbox"/> Plug/Abandon               | <input type="checkbox"/> Site clearance                     |
| <input type="checkbox"/> Drainage improvements  | <input type="checkbox"/> Maintenance dredging | <input type="checkbox"/> Production barge/Structure | <input type="checkbox"/> Subdivision                        |
| <input type="checkbox"/> Drill barge/Structure  | <input type="checkbox"/> Other structures     | <input type="checkbox"/> Prop washing               | <input type="checkbox"/> Vegetative plantings               |
| <input type="checkbox"/> Drill site   | <input type="checkbox"/> Piliings             | <input type="checkbox"/> Remove structures          | <input type="checkbox"/> Wharf/Pier/Boathouse               |
| <input type="checkbox"/> Other (Please specify.) <u>CWPPRA dedicated dredging project</u> |   |   |   |

d. Why is the proposed project needed?

To protect the functional integrity of this critical area of Lake Boudreaux and create 224 acres of emergent marsh.

☒ Check this box when you have completed Step 8; then proceed to Step 9.

Continue to page 5 for Step 9. 



## Joint Permit Application *Continued (page 5 of 12)*

### Step 9 of 16

What is the status of the proposed project?

Note: Show and identify planned, in progress, completed work and dimensions for excavations and fill on the Plan View and Cross Section Drawings.

Complete the following information to indicate the start/end dates and the current status of the proposed project.

a. Proposed project start date: 8 / 1 / 2006 Proposed project completion date: 11 / 1 / 2007

b. Is any of the project work in progress?

☒ NO (If NO, proceed to Step 9c.)

☐ YES (If YES, show and identify the work in progress on the Plan View and Cross Section Drawings.)

c. Is any of the project work complete?

☒ NO (If NO, proceed to Step 10.)

☐ YES (If YES, show and identify the work completed on the Plan View and Cross Section Drawings.)

☒ Check this box when you have completed Step 9; then proceed to Step 10.

### Step 10 of 16

How would you describe the proposed project?

Note: To apply for a wetland determination, call the COE at 504-862-1627.

Note: Information provided in this Step must be consistent with Maps and Drawings.

Complete the following information to describe structures, materials and methods for the proposed project.

a. Excavations: (Check ☒ the appropriate box(es) and indicate excavations in cubic yards and acres using the formulas below.)

Cubic yards are determined by using this formula. (Length (ft.) X Width (ft.) X Depth (ft.) divided by 27 = Cubic Yards)

Example: 25 ft. X 25 ft. X 5 ft. divided by 27 = 115.7 Cubic Yards

Acres are determined by using this formula. (Length (ft.) X Width (ft.) divided by 43,560 = Acres)

Example: 250 ft. X 250 ft. divided by 43,560 = 1.43 Acres

☐ Vegetated Waterbottoms -

Cubic Yards Acres

☒ Wetlands -

17,000 Cubic Yards 3 Acres

☒ Non-Vegetated Waterbottoms -

2 million Cubic Yards 93 Acres

☐ Non-Wet Areas -

Cubic Yards Acres

b. Fill Areas: (Check ☒ the appropriate box(es) and indicate fill areas in cubic yards and acres using the formulas in Step 10a.)

☐ Vegetated Waterbottoms -

Cubic Yards Acres

☒ Wetlands -

1 million Cubic Yards 11 Acres

☒ Non-Vegetated Waterbottoms -

1 million Cubic Yards 200 Acres

☐ Non-Wet Areas -

Cubic Yards Acres

c. What fill materials will be used for the proposed project?

(Check ☒ the appropriate box(es) and indicate the cubic yards for each type of fill material.)

☐ Concrete

Cubic Yards

☒ Rock (rip/rap)

50,000 Cubic Yards

☐ Crushed stone or gravel

Cubic Yards

☐ Sand

Cubic Yards

☒ Native material (clay, mud, soil)

2 million Cubic Yards

☐ Topsoil/Dirt

Cubic Yards

☐ Other (Please specify.)

Cubic Yards

Continue to page 6 for more of Step 10.

# Joint Permit Application *Continued (page 6 of 12)*

## Step 10 of 16 continued

How would you describe the proposed project?

Note: For any equipment used, show the access route and construction right of way on the Maps and Drawings

d. What equipment will be used for the proposed project? (Check ☒ the appropriate box(es).)

- |   |  |  |
|---|--|--|
| <input checked="" type="checkbox"/> Airboat                             | <input type="checkbox"/> Bulldozer/Grader              | <input checked="" type="checkbox"/> Marsh buggy            |
| <input type="checkbox"/> Backhoe  | <input checked="" type="checkbox"/> Dragline/Excavator | <input type="checkbox"/> Other tracked or wheeled vehicles |
| <input checked="" type="checkbox"/> Barge mounted bucket dredge         | <input type="checkbox"/> Handjet                       | <input type="checkbox"/> Self propelled pipe laying barge  |
| <input type="checkbox"/> Barge mounted drilling rig                     | <input type="checkbox"/> Land based drilling rig       | <input checked="" type="checkbox"/> Tugboat                |
| <input type="checkbox"/> Other (Please specify) <u>Hydraulic Dredge</u> |  |  |

☒ Check this box when you have completed Step 10; then proceed to Step 11.

## Step 11 of 16

What impact will the proposed project have?

Note: You will be notified by CMD if a field investigation is required to determine if the proposed project will impact wetlands

Note: Additional sheets may be required to adequately respond to 11a and/or 11b

Note: Providing detailed information at the time of application may expedite processing of your proposal

a. What alternative locations, methods and access routes were considered to avoid impact to wetlands and/or waterbottoms?

N/A

b. What efforts were made to minimize impact to wetlands and/or waterbottoms?

Material dredged from Lake Boudreau will be used beneficially to create 284 acres of Wetlands. This material will be placed in shallow open water and fragmented marsh. Farrow site within Lake Boudreau will be dredged to -20 ft NAVD83 and cover a large area to avoid anoxic conditions.

☒ Check this box when you have completed Step 11; then proceed to Step 12.

## Step 12 of 16

What are the requirements for notification of landowners of the proposed project site?

Note: CMD and COE both have mitigation requirements under different laws, rules and regulations therefore, specific agency requirements may vary

a. Are you applying for a Coastal Use Permit?

- ☐ NO (If NO, proceed to Step 13.)  
☒ YES (If YES, read the following information.)

### Requirements for Notification of Landowners.

It is the responsibility of the applicant to notify the landowner(s) of the property about this proposed project. Notification must include providing each impacted landowner with a copy of the permit application (form and plats) at the time the application is submitted to the Coastal Management Division.

While this is a legal requirement to ensure that property owners are aware of proposals which might impact their land, it also serves as a proactive measure to initiate communication between the applicant and the landowner(s), especially when mitigation might be necessary. Since mitigation can be a lengthy process, taking proactive steps early in the process may significantly reduce the time necessary to receive an authorization.

Continue to page 7 for more of Step 12. 



## Joint Permit Application *Continued (page 7 of 12)*

### Step 12 of 16 continued

**What are the requirements for notification of landowners of the proposed project site?**

*Note: If a property has multiple owners with undivided interest in the property, each person owning an interest is considered to be a landowner and must be notified.*

*Note: Additional sheets may be required if there are more than two landowners.*

*Note: Compensatory mitigation is not a monetary settlement to be used at the discretion of the landowner(s).*

*Note: A copy of the "Landowner Compensatory Mitigation Request/Waiver" form is included with this application. To obtain additional copies, visit the CMD website or call*

*• 1-800-267-4019  
or  
• 225-342-7501*

**b. Are you the sole owner of the property on which the proposed activity is to occur?**

- ☐ **YES** (If YES, proceed to Step 13.)  
☒ **NO** (If NO, follow the instructions below.)

Check ☒ the appropriate box(es) and complete the landowner information to attest to CMD that a copy of this application has been sent to all landowners whose property will be impacted by the project.

- ☐ The applicant is an owner of the property on which the proposed described activity is to occur.  
☒ The applicant has made every reasonable effort to determine the identity and current address of the owner(s) of the land on which the proposed described activity is to occur, which included, if necessary, a search of the public records of the parish in which the proposed activity is to occur.  
☐ The applicant hereby attests that a copy of the application has been distributed to the following landowners.

**Landowner #1:**

Name of Landowner \_\_\_\_\_

**Mailing Address:**

Street Address or P.O. Box \_\_\_\_\_

Unit/Apartment # \_\_\_\_\_

City \_\_\_\_\_

Parish \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

**Landowner #2:**

Name of Landowner \_\_\_\_\_

**Mailing Address:**

Street Address or P.O. Box \_\_\_\_\_

Unit/Apartment # \_\_\_\_\_

City \_\_\_\_\_

Parish \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

**c. Does the proposed activity present potential impacts to vegetated wetlands?**

- ☒ **NO** (If NO, proceed to Step 13.)  
☐ **YES** (If YES, read the information below; submit the Landowner Compensatory Mitigation Request/Waiver.)  
☐ **NOT SURE** (If NOT SURE, read the information below; submit the Landowner Compensatory Mitigation Request/Waiver.)

**Landowner Rights**

- The affected landowner(s) whose property may be impacted by the proposed project has(have) the option of requesting that compensatory mitigation be done on their property.
- Once CMD determines that mitigation is required, they will notify the applicant and all affected landowners of the extent and type of habitat impacted. The landowner(s) will be given (30) thirty days to formally request or waive their mitigation option. (This can cause substantial delays in processing of the application.)

**Applicant Responsibilities**

- Coordinate with the affected landowner(s) to develop a conceptual compensatory mitigation plan. This plan should be designed to offset the adverse impacts to vegetated wetlands which will occur from the proposed project. (This can also cause substantial delays in processing of the application.)
- To avoid delays, it is recommended that, prior to sending the application to CMD, you contact affected landowner(s) to:
  - Inform them of possible wetland impacts and discuss their compensatory mitigation rights; and
  - Ask them to indicate their intentions regarding compensatory mitigation on the form.
- Submit the Landowner Compensatory Mitigation Request/Waiver form along with your application.

☒ Check this box when you have completed Step 12; then proceed to Step 13.

*Continue to page 8 for Step 13.*



Step 13 of 16

Why are Maps and Drawings required to obtain a permit?

Note: The following websites may provide assistance in completing the Vicinity Map.

- Sonris on CMD website
- MapQuest.com
- Topozone.com

Note: For additional assistance with specific requirements, refer to the samples provided in this application package.



Quality Maps and Drawings are required to process the Joint Permit Application and for Public Notice. They must visually reflect what will be done in the proposed project and are key to the overall evaluation.

The following Maps and Drawings must be submitted with the Joint Permit Application and must show both existing and proposed conditions.

- **Vicinity Map** - Illustrates the location of the proposed project relative to surrounding areas;
- **Plan View Drawing** - Illustrates an overhead view of the proposed project; and
- **Cross Section Drawing** - Illustrates a side view of the proposed project.

In general, all Maps and Drawings should be:

- Legible and clearly labeled on single sided 8½ x 11 size paper; (large drawings that are reduced in size to fit the 8½ x 11 format are not acceptable if the scale is no longer accurate and if the dimensions and details are not clear and easy to read after reproduction in the Public Notice);
- Drawn to scale with the scale identified on each drawing; (if you cannot provide Maps and Drawings to scale, you may submit the dimensions of the proposed and existing features of the work area displayed);
- Black and white **ONLY** (Colored Maps and Drawings will **NOT** be accepted);
- Accurate and reproducible;
- Placement of the north arrow, title, legend and scale bar must be consistent on Maps and Drawings; and
- Information provided in Steps 1 through 12 must be consistent with the Maps and Drawings.

Inadequate or poor Maps and Drawings are the primary reason for delays in the permitting process. Sample Maps and Drawings are provided with this Joint Permit Application package for your assistance.

☒ Check this box when you have completed Step 13; then proceed to Step 14.

Step 14 of 16

Who needs to certify and sign this application?

Note: The application must be signed and dated by the applicant who desires to undertake the proposed activity.

Note: If an agent is being used, the applicant and agent must sign and date this application.

Read the following information. Print your name, sign and date to certify this application for processing.

- Application is hereby made for a permit or permits to authorize the work described in this application.
- To the best of my knowledge the proposed activity described in this permit application complies with and will be conducted in a manner that is consistent with the Louisiana Coastal Management Program.
- I certify that the information in this application is complete and accurate.
- If applicable, I also certify that the declarations in Step 12, notification to landowner(s), are complete and accurate.
- I will abide by the conditions of the permit or license if issued and will not begin work without the appropriate authorization.
- Permission is granted to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the property site during working hours for inspection purposes.
- If applicable, I authorize the agent identified in Step 2 to act in my behalf as agent for this application and the agent will furnish, upon request, information in support of this application.

Russell C. Watson (USFWS)

Clearly Print Name of Applicant

*[Signature]*

Applicant Signature

11-3-05

Date

- As the agent, I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

\_\_\_\_\_  
Clearly Print Name of Authorized Agent

*[Signature]*

Authorized Agent Signature

\_\_\_\_\_  
Date

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than 5 years or both.

☒ Check this box when you have completed Step 14; then proceed to Step 15.

Continue to page 9 for Step 15.





## Joint Permit Application *Continued (page 9 of 12)*

### Step 15 of 16

What fees are required for permit processing and what methods are available for payment?

COE and Local Parish Program fees will be assessed separately at the end of the process.

The following fees apply and must be received in order to process the application.

a. Check ☒ the appropriate box to indicate the fee type: (See the "Glossary" on page 10 for the definitions of terms.)

☐ \$100.00 - Non-Residential

☐ \$ 20.00 - Residential

- If your activity involves dredging or filling, CMD will bill you on the basis of \$.04 per cubic yards for residential uses and \$.05 per cubic yards for all other uses.
- Fees may not apply if the Joint Permit Application is being processed by the local Parish.
- Additional fees may be assessed for mitigation processing.

b. Check ☒ the appropriate box to indicate payment method:

☐ Check/Money Order

☐ Electronic Transfer

☐ Credit Card (Visa or Mastercard only)

☐ Escrow Account

- Make Check/Money Order payable to the Coastal Management Division.
- To pay by Credit Card, Electronic Transfer or Escrow Account, call CMD at 1-800-267-4019 to provide specific account information or provide account information on a separate sheet of paper and include with application.
- Cash is not accepted.

☐ Check this box when you have completed Step 15, then proceed to Step 16.

### Step 16 of 16

How do I submit the Joint Permit Application and Maps and Drawings for processing?

If your project is in the Galveston or Vicksburg District of the Corps of Engineers, please see page 12.

Note: Please keep a copy of the completed application for your records.

To submit this permit application, Maps and Drawings and all supporting documentation, select an option below.



MAIL:

Coastal Management Division  
P.O. Box 44487  
Baton Rouge, LA 70804-4487

If you select the MAIL option, submit the original and (7) seven copies of the Joint Permit Application, Maps and Drawings and supporting documentation.



EXPRESS MAIL:

Coastal Management Division  
617 North 3rd Street,  
Suite 1048  
Baton Rouge, LA 70802  
Phone: 225-342-7591

If you select the EXPRESS MAIL option, submit the original and (7) seven copies of the Joint Permit Application, Maps and Drawings and supporting documentation.



FAX:

225-342-6760

Attention: Coastal Management Division, Joint Permit Application Processing

- Include a cover sheet with the total number of pages; and
- If you select the FAX option, follow-up with one of the mail options to prevent delay if the fax is not legible.
- Payment arrangements should be made prior to faxing your application by calling CMD at 1-800-267-4019.

☐ Check this box when you have completed Step 16, then submit for processing.

Continue to page 10 for the "Glossary of Terms".

TRACT #5	XXX
TRACT #6	XXX
TRACT #7	CLAUDE P. PRICE
TRACT #8	XXX
TRACT #9	LAURA PORCHE AUTHEMENT
TRACT #10	LARRY AUTHEMENT
TRACT #11	PEGGY DUPLANTIS, ET AL
TRACT #12	CALVIN J. AUTHEMENT
TRACT #13	CALVIN J. AUTHEMENT
TRACT #14	KIM A. DOMANGUE
TRACT #15	DEBORAH CARNEY HEBERT
TRACT #16	REINALDO R. BEAL
TRACT #17	ERIC J. CARLOS
TRACT #18	KENNIE DWIGHT MARYLAND
TRACT #19	WILSON DUPLANTIS
TRACT #20	THE CONGREGATION OF THE H
TRACT #21	ROBERT J. BOUDREAUX, ET A
TRACT #22	ROBERT J. BOUDREAUX, ET A
TRACT #23	CLEUS C. BERGERON SR.
TRACT #24	MRS. BERTHA A. BOUDREAUX
TRACT #25	DUPLANTIS EXPLORATION, INC.
TRACT #26	EUNICE BLANCHARD VOISIN
TRACT #27	JAMES J. COLLINS, JR., ET
TRACT #28	BRYAN W. VOISIN
TRACT #29	WESLEY JOHN FITCH
TRACT #30	YVONNE CHAUVIN AUTHEMENT
TRACT #31	SIDNEY HEBERT
TRACT #32	LAWRENCE LUKE
TRACT #33	LL&E/ BURLINGTON RESOURC
TRACT #34	ANTOINE H. BOURG
TRACT #35	JAMES J. CARLOS
TRACT #36	ESTATE OF JAMES J. CARLOS
TRACT #37	XXX
TRACT #38	XXX
TRACT #39	XXX
TRACT #40	ESTHER C. GUIDRY ET AL
TRACT #41	MOAH P. ORDOYNE
TRACT #42	PATRICIA CHARLES
TRACT #43	TRAVIS J. LUKE ET AL
TRACT #44	XXX
TRACT #45	XXX
TRACT #46	XXX
TRACT #47	XXX
TRACT #48	ROBERT J. BOUDREAUX, SR.
TRACT #49	XXX
TRACT #50	XXX
TRACT #51	RYAN PROPERTIES INC., ET
TRACT #52	RYAN PROPERTIES INC., ET
TRACT #53	JEROME JOSEPH FANGUY
TRACT #54	ABEL J. BOUDREAUX, ET AL
TRACT #55	CAMILLE J. COLLINS
TRACT #56	EDDIE VOISIN, JR.
TRACT #57	GLYNN J. DUPLANTIS
TRACT #58	PERCY PETER DUPLANTIS
TRACT #59	XXX
TRACT #60	JESSIE C. SCOTT, ET AL
TRACT #61	WILBERT JOS. MARONGE

**PRELIMINARY**

THIS DOCUMENT SHALL  
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CONSTRUCTION, BIDDING,  
RECORDATION, CONVEYANCE,  
SALES, OR AS THE BASIS  
FOR THE ISSUANCE  
OF A PERMIT

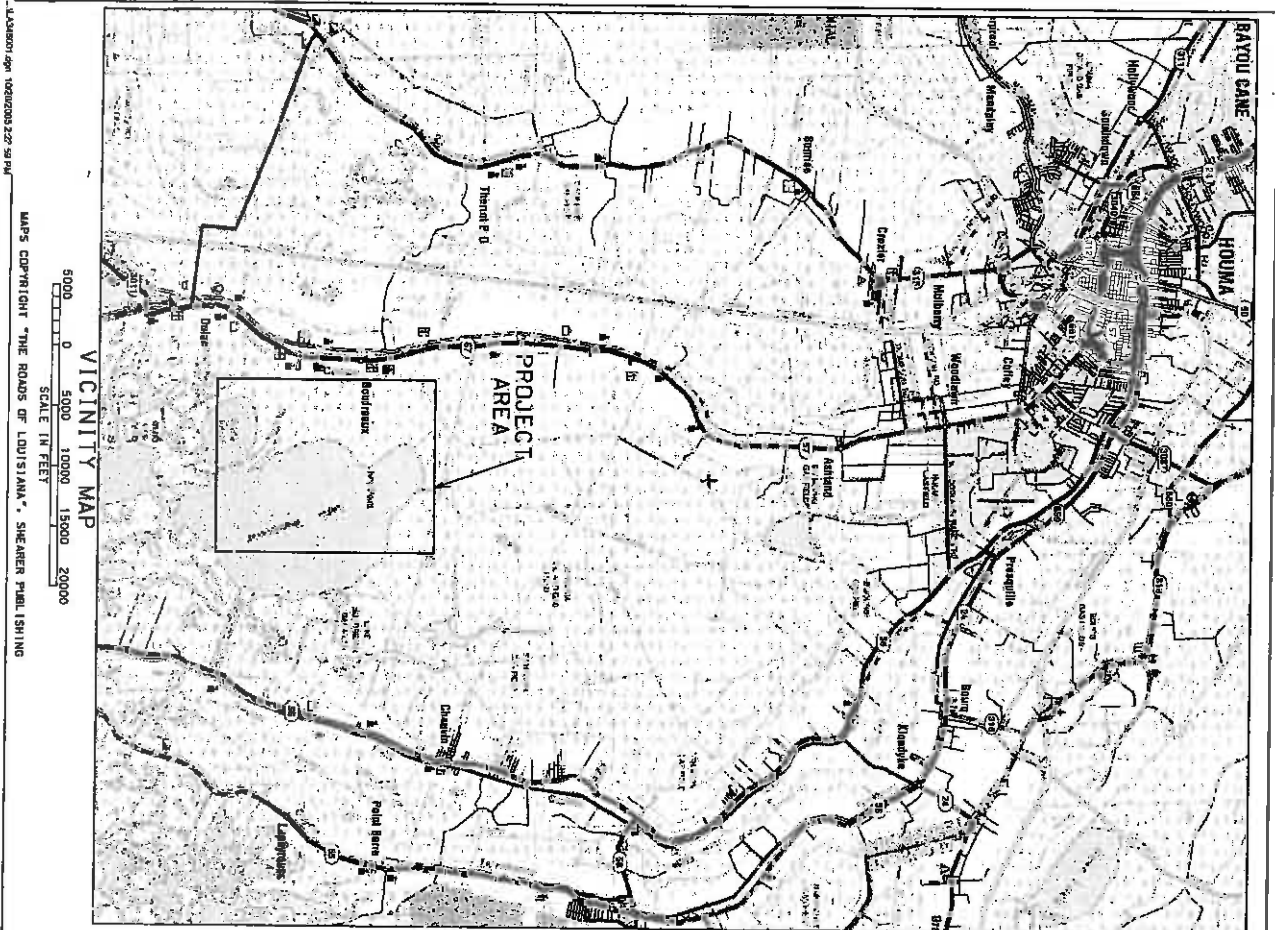
NO.	DATE	REVISIONS	FILE

DRAWING NAME  
LA346003.dgn



LANDOWNER LISTINGS  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

DESIGNED	R. FALKNER	DATE	01/05
DRAWN	A.J. GROMLICH	DATE	01/05
CHECKED			
APPROVED			



**WEST LAKE BOUDREUX**  
**SHORELINE PROTECTION AND MARSH CREATION**  
**PROJECT TE-46**  
**BUILT UNDER**  
**COASTAL WETLANDS, PLANNING, PROTECTION AND RESTORATION ACT**  
**PUBLIC LAW 101-646**

BY THE  
**UNITED STATES FISH AND WILDLIFE SERVICE**  
 OF THE  
**UNITED STATES DEPARTMENT OF INTERIOR**  
 WITH THE ASSISTANCE OF  
**NATURAL RESOURCES CONSERVATION SERVICE**  
 OF THE  
**UNITED STATES DEPARTMENT OF AGRICULTURE**

2005

**INDEX TO DRAWINGS**

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3	GENERAL LISTINGS
4	PROPOSED DRAINAGE
5-9	PLAN AND PROFILE-ROCK DIKE (NORTHERN SEGMENT)
10-11	PLAN AND PROFILE-ROCK DIKE (CENTRAL SEGMENT)
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17-18	TYPICAL SECTIONS - ROCK DIKE
19-20	DETAILS - CHOKER DOWN SECTION
21	PLAN MAP - MARSH CREATION (NORTHERN SECTION)
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24	PROFILE #2 & PROFILE #3
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30	PROFILE #10, PROFILE #11 & PROFILE #12
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38	PLAN MAP - BORROW AREA
39	SETTLEMENT PLATE DETAILS
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**LOCATION IN LOUISIANA**  
**TERRIBONNE PARISH**

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 OF A PERMIT

FILE NAME  
 LA-346

DRAWING NAME  
 LA346001.000

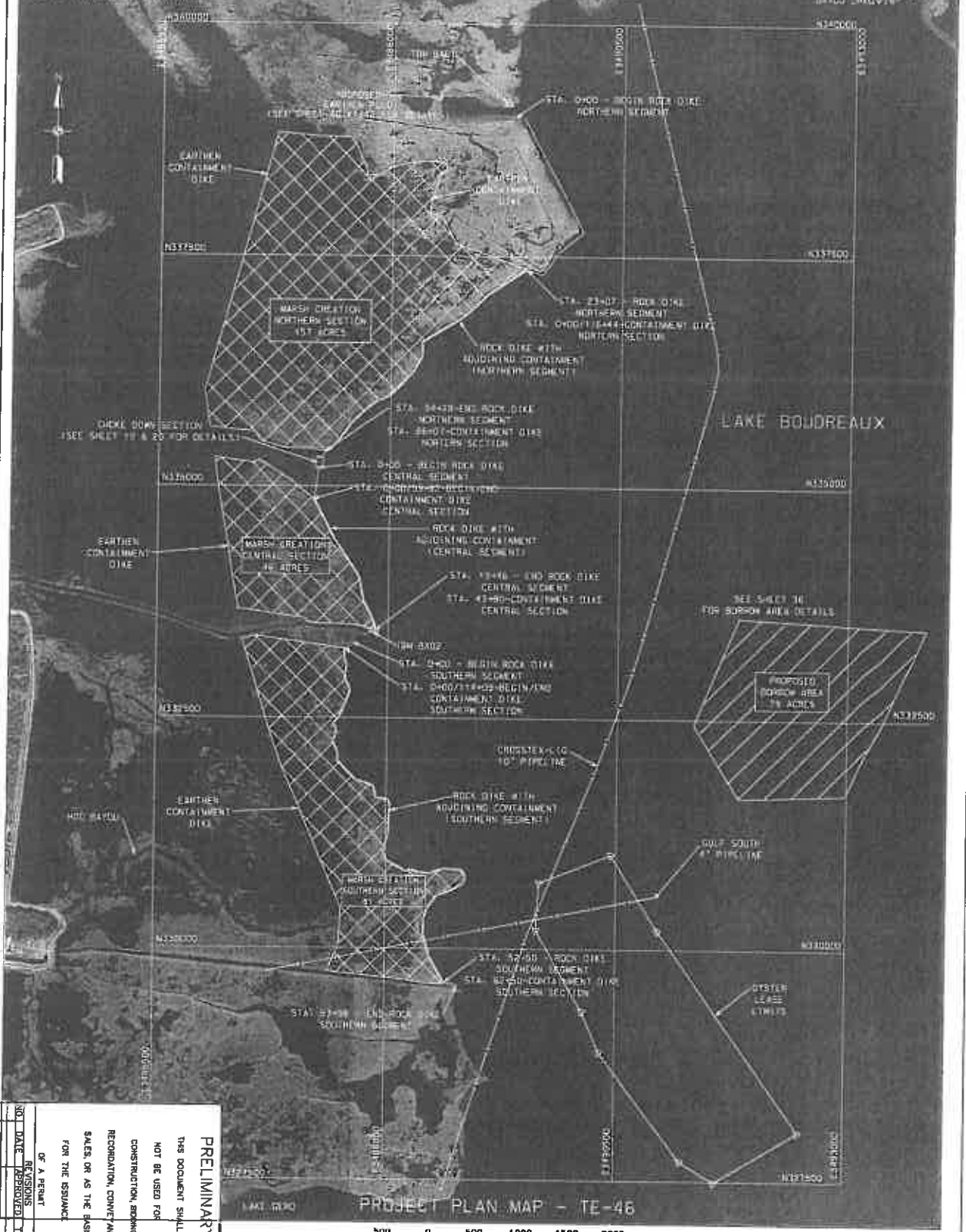
SHEET 01 of 59

**COVER SHEET**  
**TE-46 - WEST LAKE BOUDREUX**  
**CONSTRUCTION UNIT NO. 1**  
**TERRIBONNE PARISH, LOUISIANA**

DESIGNED	DATE
R. FAULKNER	01/05
A.J. GREWILLION	01/05
CHECKED	
APPROVED	

BM	NORTHING	EASTING	EL. (FEET)	REMARKS
TBM 0001	133442.82	543922.15	7.12	DIKE CROSSLING
TBM 0002	133444.86	544017.07	1.00	DIKE CROSSLING

NOTES:  
 1. HORIZONTAL CONTROL - NAD83 - LOUISIANA STATE COORDINATE SYSTEM - ZONE 17N  
 2. VERTICAL DATUM - NAVD83  
 3. SERIAL PHOTO DATA - 7000 0700



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 RECONSTRUCTION, CONVEYANCE,  
 SALES, OR AS THE BASIS  
 FOR THE ISSUANCE  
 OF A PERMIT  
 OR A REPORT  
 UNLESS SPECIFICALLY  
 NOTED OTHERWISE

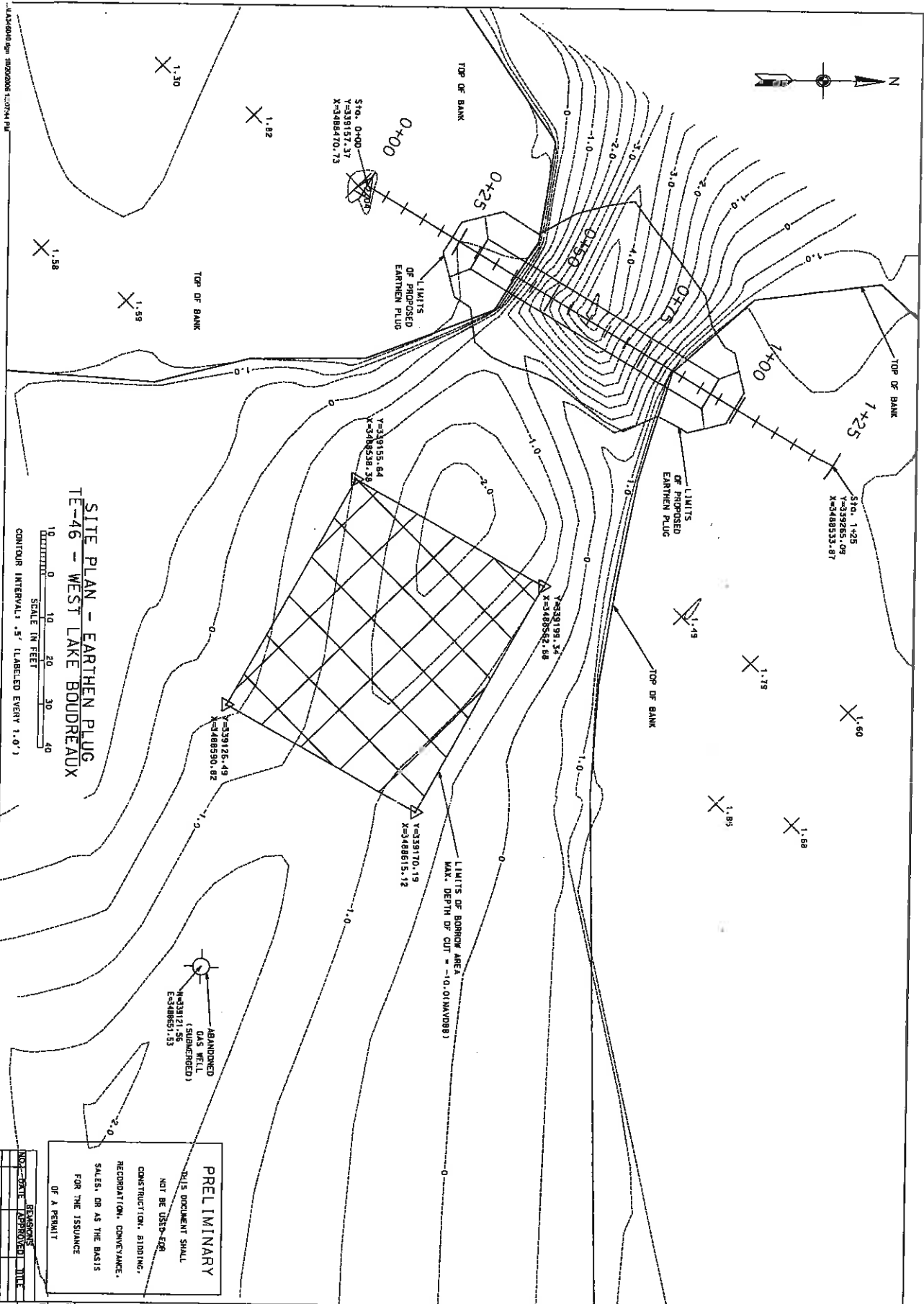
DATE: 01/05  
 DRAWN: R. J. FALKNER  
 CHECKED: R. J. FALKNER  
 APPROVED: R. J. FALKNER

**NRCS**  
 National Resources Conservation Service  
 United States Department of Agriculture

FILE NAME: LA-346  
 DRAWING NAME: LA346004.dgn  
 SHEET 04 OF 39

**PROJECT PLAN MAP**  
**TE-46 - WEST LAKE BOUDREAU**  
**CONSTRUCTION UNIT NO. 1**  
**TERREBONNE PARISH, LOUISIANA**

DESIGNED	R. J. FALKNER	DATE	01/05
DRAWN	R. J. FALKNER	DATE	01/05
CHECKED	R. J. FALKNER	DATE	01/05
APPROVED	R. J. FALKNER	DATE	01/05



**SITE PLAN - EARTHEN PLUG  
TE-46 - WEST LAKE BOUDREAUX**

SCALE IN FEET  
10 0 10 20 30 40  
CONTOUR INTERVAL: 5' (LABELED EVERY 1.0')

Sta. 0+00  
Y=339151.37  
X=3488470.73

Sta. 1+25  
Y=339255.09  
X=3488535.87

Y=339155.64  
X=3488538.38

Y=339191.34  
X=3488562.68

Y=339170.19  
X=3488615.12

ABANDONED  
WAS WELL  
(SURFACED)  
Y=339121.56  
X=3488551.53

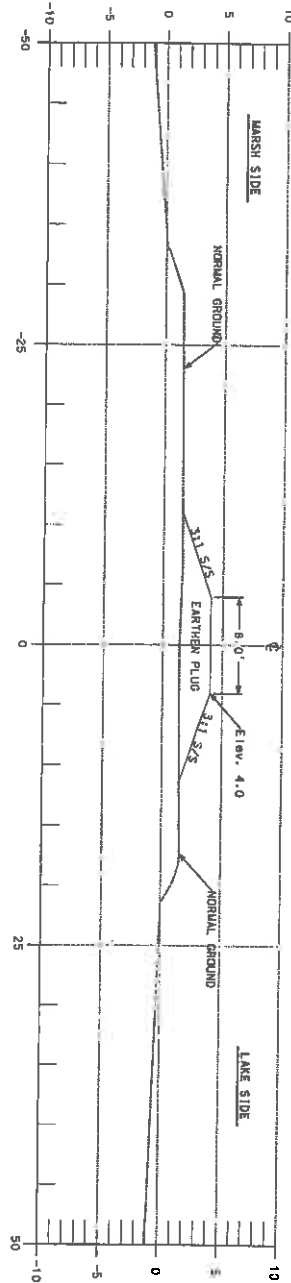
**SITE PLAN- EARTHEN PLUG  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA**



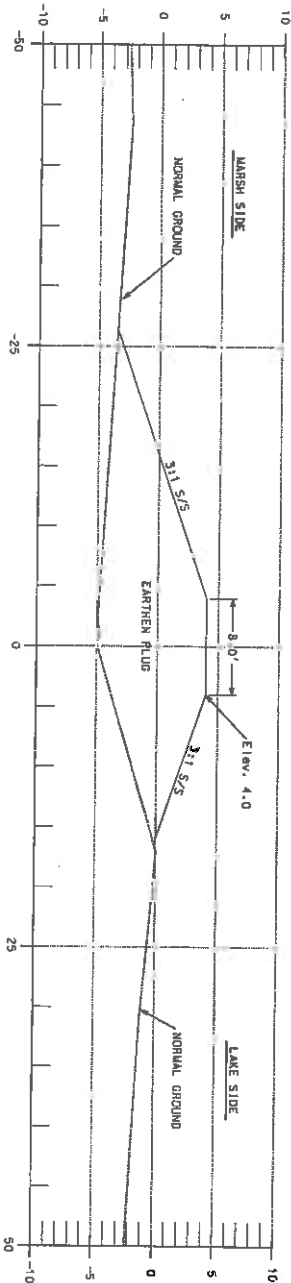
Designed	R. FAULKNER	Date	01/05
Drawn	A.J. CREMILLION	Date	01/05
Checked			
Approved			







TYPICAL SECTION - OUTSIDE OF CHANNEL  
EARTHEN PLUG



TYPICAL SECTION - WITHIN CHANNEL  
EARTHEN PLUG

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NOT BE USED FOR  
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RECONSTRUCTION, CONVEYANCE,  
SALES, OR AS THE BASIS  
FOR THE ISSUANCE  
OF A PERMIT

NO.	DATE	APPROVED	BY
1	01/05	R. FALKNER	01/05
2	01/05	R. J. CREMILLON	01/05
3			
4			

File Name  
LA-346  
Drawing Name  
LA346-001  
Sheet 42 of 59



CROSS SECTIONS-EARTHEN PLUG.  
TE-46 - WEST LAKE BOUDREAUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

Designed: R. FALKNER  
Drawn: R. J. CREMILLON  
Checked:  
Approved:

# MARSH SIDE

MARSH CREATION  
FILL HEIGHT  
ELEV. +3.2 (NAVD 88)

ELEV. +6.0

ELEV. +3.5

NOTE:  
THE ROCK DIKE FOR THE NORTHERN  
SEGMENT SHALL HAVE SIDE SLOPES  
OF 2:3 HORIZONTAL TO 1 VERTICAL.

## LAKE SIDE

NOTE:  
MATERIAL EXCAVATED TO CREATE THE FLOATATION  
ACCESS CHANNEL SHALL BE USED TO CONSTRUCT  
THE EARTHEN CONTAINMENT DIKE. EXCESS MATERIAL  
NOT USED TO CONSTRUCT THE EARTHEN CONTAINMENT  
DIKE SHALL BE PLACED WITHIN THE MARSH CREATION AREA.

2:1 B/S

83' MAXIMUM

2:1 B/S

ELEV. -5.0 MAXIMUM  
DEPTH OF CUT

# MARSH SIDE

MARSH CREATION  
FILL HEIGHT  
ELEV. +3.2 (NAVD 88)

ELEV. +6.0

ELEV. +3.5

NOTE:  
THE ROCK DIKE FOR BOTH THE CENTRAL  
AND THE SOUTHERN SEGMENT SHALL HAVE  
SIDE SLOPES OF 2 HORIZONTAL TO 1 VERTICAL.

## TYPICAL SECTION-1 (NORTHERN SEGMENT) (NOT TO SCALE)

## LAKE SIDE

NOTE:  
MATERIAL EXCAVATED TO CREATE THE FLOATATION  
ACCESS CHANNEL SHALL BE USED TO CONSTRUCT  
THE EARTHEN CONTAINMENT DIKE. EXCESS MATERIAL  
NOT USED TO CONSTRUCT THE EARTHEN CONTAINMENT  
DIKE SHALL BE PLACED WITHIN THE MARSH CREATION AREA.

2:1 B/S

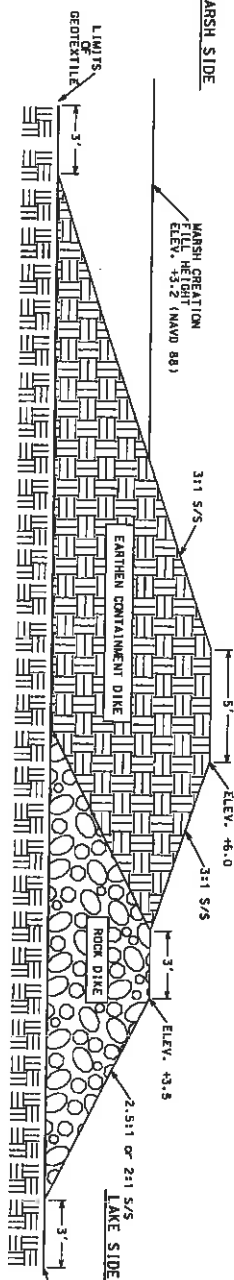
80' MAXIMUM

2:1 B/S

ELEV. -5.0 MAXIMUM  
DEPTH OF CUT

## TYPICAL SECTION-2 (CENTRAL & SOUTHERN SEGMENT) (NOT TO SCALE)

## DETAILS--ROCK DIKE WITH ADJOINING EARTHEN CONTAINMENT DIKE (NOT TO SCALE)



## Φ ROCK DIKE STATIONING

SEGMENT	REACH	NOTES
NORTHERN	0+00 - 23+07	ROCK ONLY (TYP. SEC. 4-SHEET 18)
NORTHERN	23+07 - 52+47	ROCK WITH CONTAINMENT (TYP. SEC. 1)
NORTHERN	52+47 - 54+28	ROCK ONLY (TYP. SEC. 4-SHEET 18)

## Φ ROCK DIKE STATIONING

SEGMENT	REACH	NOTES
CENTRAL	0+00 - 3+41	ROCK ONLY (TYP. SEC. 4-SHEET 18)
CENTRAL	3+41 - 19+46	ROCK WITH CONTAINMENT (TYP. SEC. 2)
SOUTHERN	0+00 - 1+01	ROCK ONLY (TYP. SEC. 4-SHEET 18)
SOUTHERN	1+01 - 52+51	ROCK WITH CONTAINMENT (TYP. SEC. 2)
SOUTHERN	52+51 - 53+98	ROCK ONLY (TYP. SEC. 4-SHEET 18)

**PRELIMINARY**  
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CONSTRUCTION, BIDDING,  
RECONSTRUCTION, CONVEYANCE,  
SALES, OR AS THE BASIS  
FOR THE ISSUANCE  
OF A PERMIT

NO.	DATE	APPROVED	TIME
1			

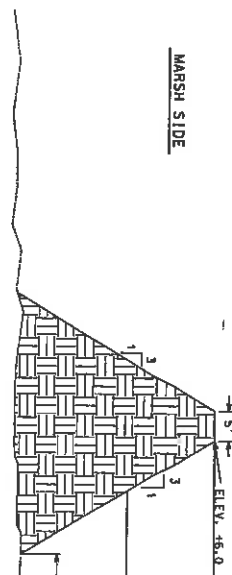


TYPICAL SECTIONS  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

Designed	R. FAULKNER	Date	01/05
Drawn	A.J. GREWILLION	Date	01/05
Checked			
Approved			

7/16 Name  
LA-346  
Drawing Name  
LAX4601T.dgn  
Sheet 17 of 55

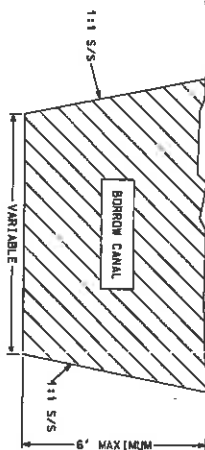
# MARSH SIDE



# MARSH CREATION SIDE

MARSH CREATION  
FILL HEIGHT  
ELEV. +3.2 (NAVD 88)

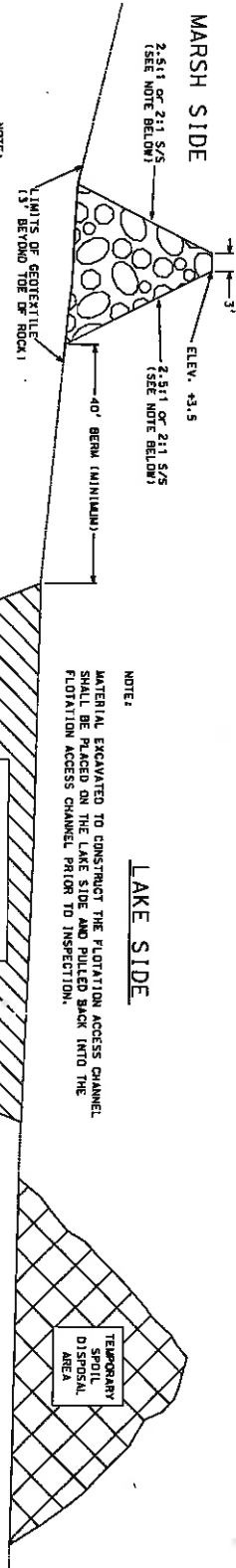
BORROW CANAL TO BE BACK FILLED  
WITH DREDGE MATERIAL.



# SECTION 3 EARTHEN CONTAINMENT DIKE STATIONING

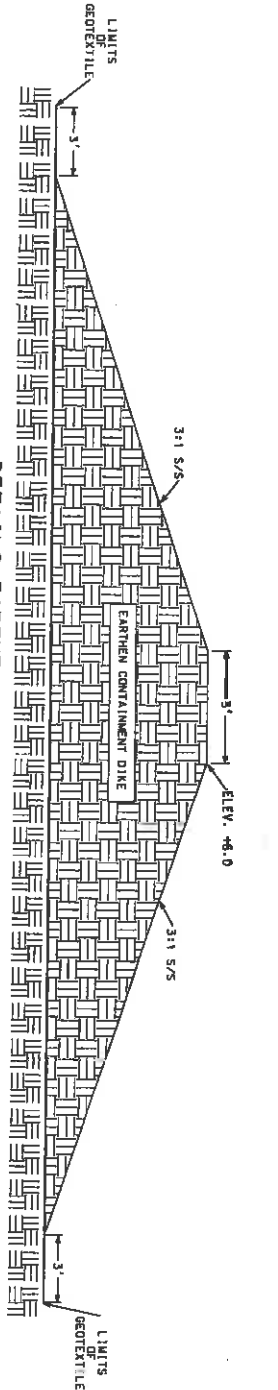
CREATION AREA	REACH	NOTES
NORTHERN AREA	0+00 - 86+07	EARTHEN CONTAINMENT ONLY (TYP. SECTION 3)
CENTRAL AREA	86+07 - 116+44	EARTHEN CONTAINMENT W/ADJOINING ROCK (TYP. SECTION 1)
CENTRAL AREA	0+00 - 43+90	EARTHEN CONTAINMENT ONLY (TYP. SECTION 3)
SOUTHERN AREA	43+90 - 53+42	EARTHEN CONTAINMENT W/ADJOINING ROCK (TYP. SECTION 2)
SOUTHERN AREA	0+00 - 62+50	EARTHEN CONTAINMENT ONLY (TYP. SECTION 3)
SOUTHERN AREA	62+50 - 114+09	EARTHEN CONTAINMENT W/ADJOINING ROCK (TYP. SECTION 2)

# TYPICAL SECTION-3 (NORTHERN, CENTRAL & SOUTHERN AREAS) EARTHEN CONTAINMENT ONLY (NOT TO SCALE)



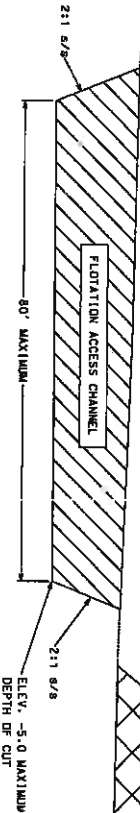
NOTE:  
THE ROCK DIKE FOR THE NORTHERN  
SEGMENT SHALL HAVE SIDE SLOPES  
OF 2:1 HORIZONTAL TO 1 VERTICAL.  
THE SOUTHERN SEGMENT SHALL HAVE  
SIDE SLOPES OF 2 HORIZONTAL TO  
1 VERTICAL.

# TYPICAL SECTION-4 (ROCK ONLY) (NOT TO SCALE)



# LAKE SIDE

NOTE:  
MATERIAL EXCAVATED TO CONSTRUCT THE FLOTATION ACCESS CHANNEL  
SHALL BE PLACED ON THE LAKE SIDE AND PULLED BACK INTO THE  
FLOTATION ACCESS CHANNEL PRIOR TO INSPECTION.



TEMPORARY  
SPILL  
DISPOSAL  
AREA

**PRELIMINARY**

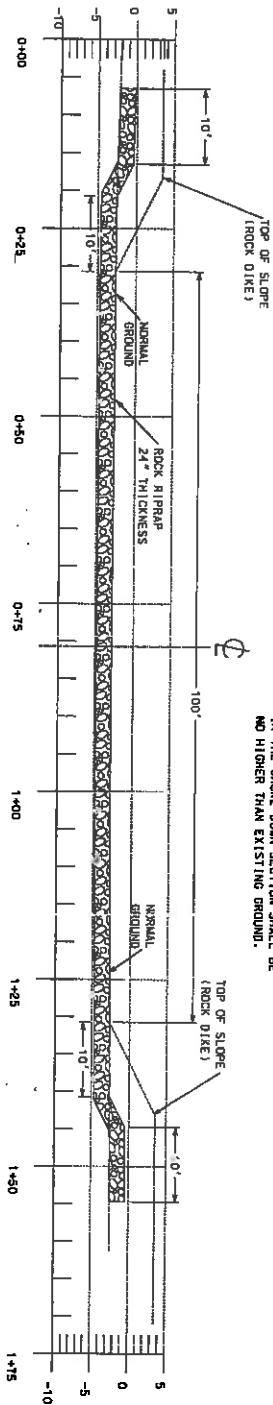
THIS DOCUMENT SHALL  
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NO. DATE REVISIONS  
1 10/20/2008 1



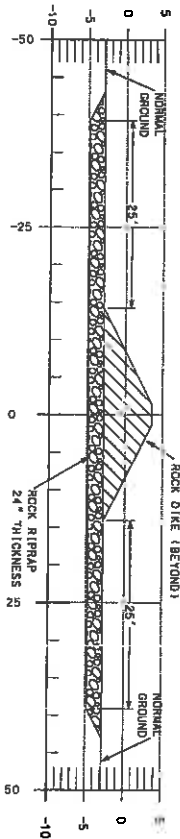
TYPICAL SECTIONS  
TE-46 - WEST LAKE BOUDREAU  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

Date  
Designed R. FAULKNER 01/05  
Drawn A. J. GREMILLION 01/05  
Checked  
Approved



NOTE.  
THE ELEVATION OF THE TOP OF THE ROCK  
IN THE CHOKEDOWN SECTION SHALL BE  
NO HIGHER THAN EXISTING GROUND.

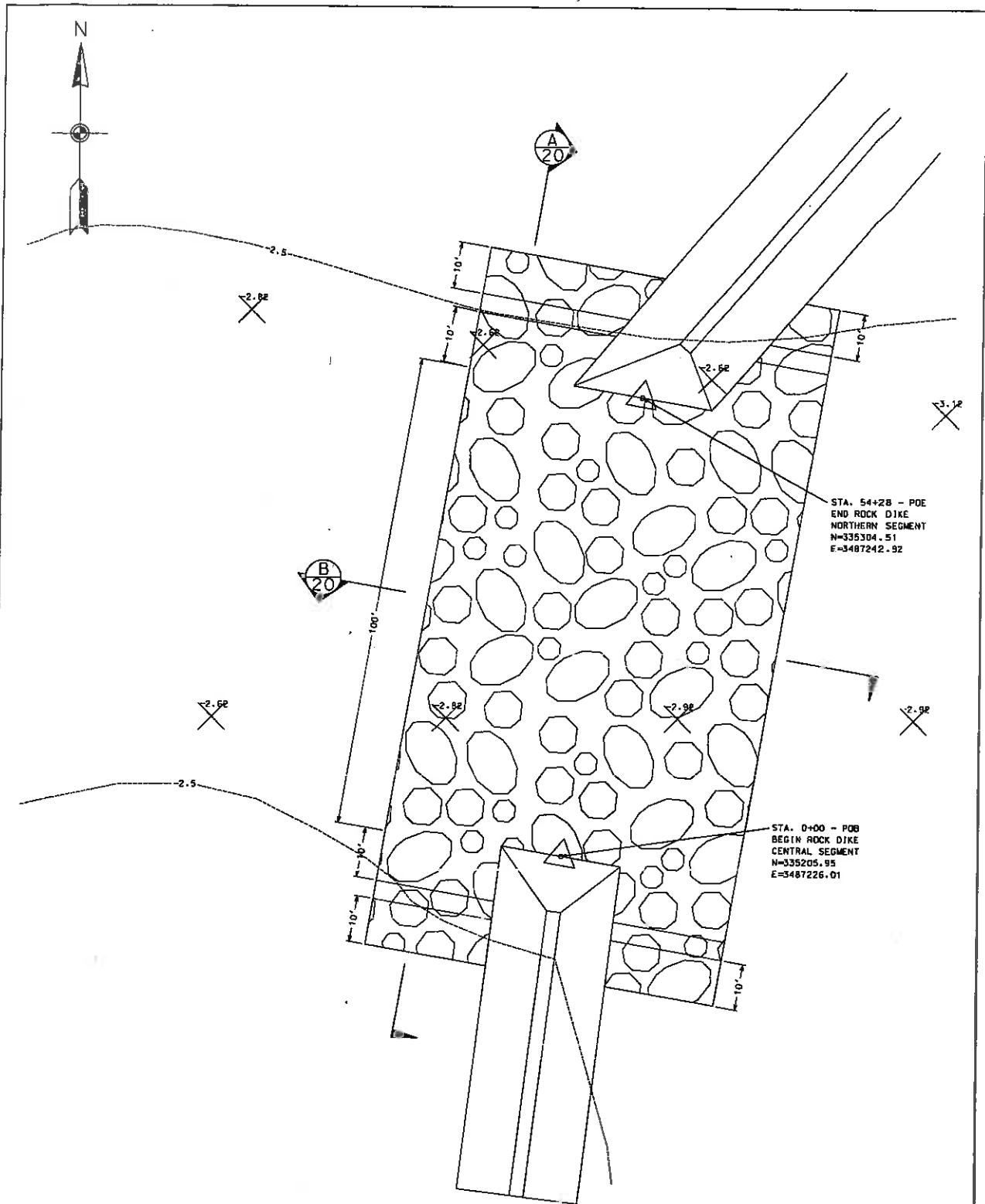
CHOKEDOWN SECTION (A)  
(SCALE AS SHOWN) 19



NOTE.  
THE ELEVATION OF THE TOP OF THE ROCK  
IN THE CHOKEDOWN SECTION SHALL BE  
NO HIGHER THAN EXISTING GROUND.

CHOKEDOWN SECTION (B)  
(SCALE AS SHOWN) 19

PRELIMINARY	
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DATE	APPROVED
TITLE	



PLAN VIEW - CHOKEDOWN SECTION  
(SCALE AS SHOWN)



PRELIMINARY	
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CHOKEDOWN DETAILS  
TE-46 - WEST LAKE BOUDREUX  
CONSTRUCTION UNIT NO. 1  
TERREBONNE PARISH, LOUISIANA

Designed	R. FAULKNER	Date	08/05
Drawn	A.J. GREMILLION	Date	08/05
Checked			
Approved			

ATTACHMENT VI

WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
(TE-46)

**OPERATION, MAINTENANCE, AND REHABILITATION  
BUDGET**



## ATTACHMENT VI

### OPERATION AND MAINTENANCE BUDGET

#### WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION (TE-46)

LEAD AGENCY: United States Fish and Wildlife Service

#### PROJECT FEATURES

- 12,447 linear feet of foreshore rock dike
- 220 acres of marsh creation

#### OPERATION AND MAINTENANCE / REHABILITATION ASSUMPTIONS

The operation, maintenance, and rehabilitation budget for the West Lake Boudreaux Shoreline Protection and Marsh Creation (TE-46) was based on the following assumptions:

Year 2 - Degrade earthen containment dikes to marsh elevation.

Year 10 - Assume 2.0 foot lift of rock rip-rap will be required along the entire length of foreshore rock dike with estimated quantity of 26,642 tons.

Rebuild earthen plug.

#### OPERATION AND MAINTENANCE CONSIDERATIONS

(Based on a 20 year project life; costs include inflation)

<b>A.</b>	<b>ANNUAL INSPECTIONS:</b>	<b>\$128,100</b>
	(1 day field trip with 5 team members including federal participant, boat, and report form)	
<b>B.</b>	<b>ANNUAL COST OF OPERATIONS:</b>	<b>\$0</b>
	(No operations required for this project)	
<b>C.</b>	<b>PREVENTATIVE MAINTENANCE</b>	<b>\$0</b>
<b>D.</b>	<b>COSTS FOR MAINTENANCE PROJECT AT YEAR 2 (2011)</b>	

#### **Construction:**

1. Mobilization/Demobilization	\$ 34,000
(lump sum)	

2. Degrade Earthen Containment Dikes (10,160 L.F. @ \$12.15/L.F.)	\$ 123,444	
3. Structure Removal:	<u>\$ 7,450</u>	
Construction Total:	\$ 164,894	
Total Construction Cost (Actual)		\$ 164,894

<b>TOTAL COST FOR MAINTENANCE AT YEAR 2 (2011)</b>	<b>\$ 164,894</b>
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**E. COSTS FOR MAINTENANCE PROJECT AT YEAR 10 (2019)**

**Construction:**

1. Mobilization/Demobilization (lump sum)	\$ 100,000	
2. Recap rock dike (26,642 tons @ \$75/ ton)	\$1,998,150	
3. Rebuild Earthen Plug (lump sum)	\$ 10,000	
Construction Total:	\$2,108,150	
Contingency (25%)	<u>\$ 527,038</u>	
	\$2,635,188	
Total Estimated Construction Cost (2019):		<b>\$2,635,188</b>
5. LDNR Administration		<b>\$ 46,880</b>
6. Engineering Consultant Design, Survey and Inspection:		<b>\$ 312,463</b>
Basic E&D Services: (\$2,635,188 x 7%)	\$184,463	
Construction Inspection: (900 hrs. @ \$95)	\$ 85,500	
Construction Administration: (200 hrs @ \$125/hr)	\$ 25,000	

As-built Survey:  
(5 days @ \$3,500/day)

\$ 17,500

<b>TOTAL COST FOR MAINTENANCE AT YEAR 10 (2019)</b>	<b>\$2,994,531</b>
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<b>OPERATION, MAINTENANCE AND REHABILITATION (O&amp;M) BUDGET SUMMARY – TE-46 WEST LAKE BOUDREAUX</b>
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<b>O&amp;M Budget:</b>	<b>\$3,287,525</b>
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### **Year 10 Maintenance – Rock Quantity Calculations**

**Rock Dike:** Assume a 2.0' lift along the entire length of rock dike.

Length: 12,772 linear ft.

Height: Use avg. settlement of 2.0'

End area: 16.0 sq. ft.

Volume: 7,569 cu. yd.

Quantity:  $7,569 \text{ cu. yd.} \times 1.6 = 12,110 \text{ tons} \times 1.10 \text{ (losses)} = \mathbf{13,321 \text{ tons}}$

(Eliminated year 5 of the original Maintenance Budget and included the 13,321 tons in Year 10 for a total of 26,642 Tons)

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**Annual Inspections: (Beginning in 2007 including inflation)**

Annual Inspection Field Trip Rate                      \$4,047  
(USFWS, *One-Day, Based on PPL12 Summary Cost Data for O&M Functions, 2002*)

Year 1 (\$4,047 x 1.1425)                                      \$4,624

Year 2 (\$4,047 x 1.1802)                                      \$4,776

Year 3 (\$4,047 x 1.2191)                                      \$4,934

Year 4 (\$4,047 x 1.2594)                                      \$5,097

Year 5 (\$4,047 x 1.3009)                                      \$5,265

Year 6 (\$4,047 x 1.3439)                                      \$5,439

Year 7 (\$4,047 x 1.3882)                                      \$5,618

Year 8 (\$4,047 x 1.4340)                                      \$5,803

Year 9 (\$4,047 x 1.4813)                                      \$5,995

Year 10 (\$4,047 x 1.5302)                                     \$6,193

Year 11 (\$4,047 x 1.5807)                                     \$6,397

Year 12 (\$4,047 x 1.6329)                                     \$6,608

Year 13 (\$4,047 x 1.6868)                                     \$6,826

Year 14 (\$4,047 x 1.7424)                                     \$7,051

Year 15 (\$4,047 x 1.7999)                                     \$7,284

Year 16 (\$4,047 x 1.8593)                                     \$7,525

Year 17 (\$4,047 x 1.9207)                                     \$7,773

Year 18 (\$4,047 x 1.9841)                                     \$8,030

Year 19 (\$4,047 x 2.0495)                                     \$8,294

Year 20 (\$4,047 x 2.1172)                                     \$8,568

<b>Annual Inspections</b>	<b>\$128,100</b>
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ATTACHMENT VII

WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION  
(TE-46)

**OPERATION OF STRUCTURES**



## **ATTACHMENT VIII**

### **WEST LAKE BOUDREAUX SHORELINE PROTECTION AND MARSH CREATION (TE-46)**

## **ANNUAL INSPECTIONS**

The purpose of the annual inspections is to inspect and evaluate the condition of all project features to determine if structures are operating correctly and identify any deficiencies that may require maintenance. An annual inspection report outlining these field observations will be drafted by CPRA. This report shall include the type of structure and description, date and time of inspection, personnel present for inspection, weather conditions, water levels at the time of inspection, general condition of and any observed damages to structures.

In the case of severe storms and tidal events, additional inspections may be required during the annual inspection period to assess potential damage from such weather events.